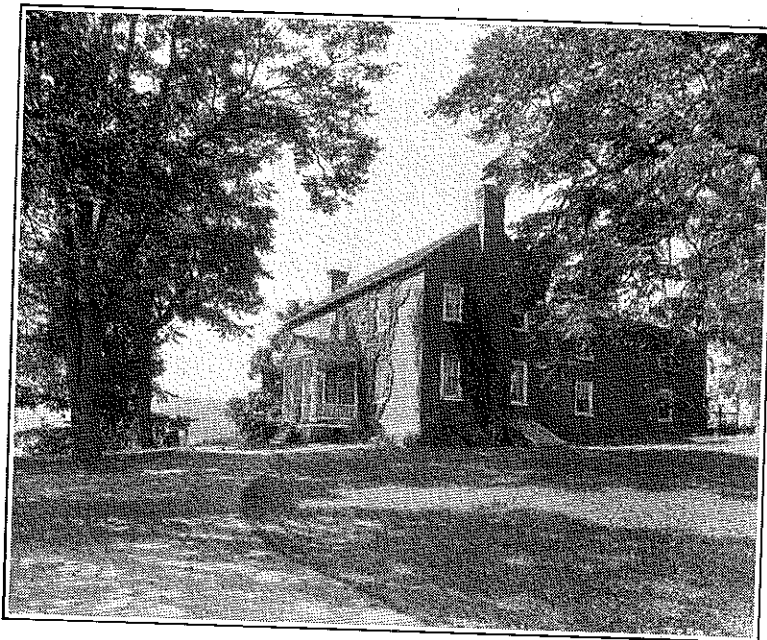


Agricultural Education



Farm Home of an Illustrious Farmer

The McCormick home on Walnut Grove Farm, Virginia. Here lived Cyrus Hall McCormick when, as a young man of 22, he invented the first reaper in 1831.

[See editorial page]

"If education is to be growth rather than the mere learning of something prescribed to be learned, it must be through challenging situations or purposeful activities openly attacked, critically tested."

EDITORIAL COMMENT

A monthly magazine for teachers of agriculture. Managed by an editorial board chosen by the Agricultural Section of the Vocational Association and published at cost by the Meredith Publishing Company at Des Moines, Iowa.

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PROGRAM

Agricultural Education Section, American Vocational Association, Detroit, Michigan

VOCATIONAL EDUCATION FOR RELIEF AND RECONSTRUCTION

Thursday, December 7, 1933

THE BUSINESS OF FARM ORGANIZATION AND MANAGEMENT

Chairman: Mr. E. E. Gallup, State Supervisor of Agricultural Education, Lansing, Michigan

9:00 a. m. Teaching Farm Reorganization to Evening School Groups, Dr. R. H. Woods, University of Kentucky
 Discussion: Dr. John T. Wheeler, Georgia State College of Agriculture

10:20 a. m. Agricultural Education Magazine, Dr. Carsie Hammonds, Editor

10:30 a. m. Teaching Farm Management to High School Groups, Professor C. B. Gentry, Connecticut State College
 Discussion: Professor E. C. Magill, Virginia Polytechnic Institute, Blacksburg, Virginia

Thursday, December 7, 1933

NEW USES FOR OLD LAND

Chairman: Dr. W. F. Stewart, Professor of Agricultural Education, The Ohio State University, Columbus, Ohio

1:30 p. m. National Policies of Land Utilization, Dr. George S. Wehrwein, University of Wisconsin
 Discussion: Professor B. A. Walpole, Michigan State College, Lansing, Michigan

3:00 p. m. Practical and Usable Programs of Farm Land Use, Professor E. B. Hill, Michigan State College, East Lansing, Michigan.
 Discussion: Professor H. G. Kenestruck, The Ohio State University, Columbus, Ohio.

Friday, December 8, 1933

READJUSTING RURAL CREDIT AND RURAL EDUCATION

Chairman: Dr. R. M. Stewart, Professor of Agricultural Education, Cornell University, Ithaca, New York

9:00 a. m. Reconstructing the Agricultural Credit of the Nation, Dr. W. I. Myers, Cornell University, National Farm Credit Administration
 Discussion: Mr. C. L. Angerer, Assistant Supervisor of Vocational Agriculture, Jefferson City, Missouri

10:30 a. m. Adjusting Vocational Agriculture to Changing Conditions, Dr. C. H. Lane, Chief, Agricultural Education Service

Discussion: Lindley H. Dennis, Assistant State Superintendent of Public Instruction, Lansing, Michigan.

Saturday, December 9, 1933

ANALYZING AGRICULTURAL EDUCATION

Chairman: Mr. L. M. Sasman, State Supervisor of Agricultural Education, Madison, Wisconsin

8:30 a. m. Accomplishments and Needs in Research in Agricultural Education
 (Discussion to be based on the summary of research in agricultural education just completed by the Committee on Research.)

Teacher Training

Dr. R. M. Stewart, Division of Rural Education, Cornell University, Ithaca, New York

High School Program

Dr. W. F. Stewart, Department of Agricultural Education, Ohio State University, Columbus

Evening School Program

Professor E. D. Stivers, Department of Agricultural Education, University of Tennessee, Knoxville

Part-time School Program

Dr. F. W. Lathrop, Specialist in Research, Agricultural Education Service, Washington, D. C.

Administration and Supervision of Agricultural Education

Professor L. D. Klemmedson, Department of Agricultural Education, University of Arizona, Tucson

Measurement

Dr. H. M. Hamlin, Department of Vocational Education, Iowa State College, Ames

10:30 a. m. Agricultural Education Outlook, Dr. Ray Fife, President of the A. V. A., State Supervisor of Agricultural Education, Columbus, Ohio

11:30 a. m. Committee Reports
 Election of Officers
 Appointment of Committees

WALNUT GROVE THE McCORMICK HOME

IN 1808 Robert McCormick married. The son, Cyrus, was born the next year, and in 1810 Robert bought the 532-acre home farm from his aged father. In 1822 he decided that it was time to exchange the log house for one better suited to his station in the world. Stone was brought from his fields, and lime from his kilns. A heavy foundation 65 x 55 feet was laid. "Upon this a red-brick house arose, with a porch, a service wing in the rear, and many windows with white casements. The front door opened upon a broad hallway, and the eight rooms of its two stories were gradually furnished with products of Robert's own skill and the yield of Lynchburg and Richmond stores. High wainscoting, carved wooden mantels, and broad fireplaces added to the comfort and distinction of the interior." From his deep shady lawn Robert could look down the slope and over his fields to the Blue Ridge. Clustered about his house were his workshops, his barns, and the quarters for his few slaves. Except for a few luxuries, the McCormick estate was self-sufficing. In short, Walnut Grove stood for a measure of success in the Valley. All the early reaping machines were built in the blacksmith shop on the Walnut Grove farm.—C. H.

Agricultural Education November, 1933

Professional

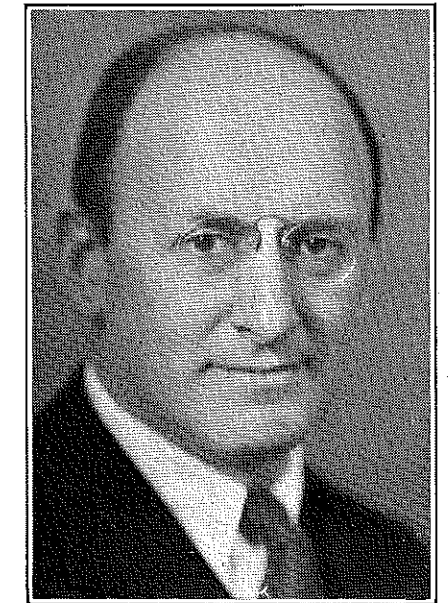
The Farm Credit Administration

HENRY MORGENTHAU, Jr., Governor of the Farm Credit Administration

AGRICULTURAL EDUCATION expresses its appreciation to Governor Morgenthau for the timely and helpful statement beginning on this page, concerning the Farm Credit Administration. Indeed, as we study this statement and the publications prepared under Governor Morgenthau's leadership, we realize that a new day has dawned for the American farmer in dealing with his credit problems.

Governor Morgenthau has been a life-long friend of agricultural education. As publisher of the American Agriculturist, New York State Conservation Commissioner and Chairman of Governor Roosevelt's Advisory Commission on Agriculture, he championed the cause of systematic training for life in the open country. As a personal friend of Mr. Morgenthau's, the writer desires to pay public tribute to his qualities of leadership and service to agriculture, which have characterized his work, both in private life and in his present high office.
 —A. K. Getman.

government aid also provided capital for ordinary farm operations. These associations have as the principal source of their loan funds the federal inter-



Henry Morgenthau, Jr.

mediate credit banks, which are entirely owned by the government but which derive loanable money from the sale of their debentures to the investing public.

It is the objective of the Farm Credit Administration that as soon as possible the principal source of ordinary loans to carry on farming operations shall be local, cooperative credit associations. These will get their money mostly by borrowing from or discounting with the intermediate credit banks, as do such associations now existing. An effort is being made to organize enough of these

local associations by the spring of 1934 so that they will loan the bulk of funds needed for 1934 production from agencies under the supervision of the Farm Credit Administration. Until they are organized, however, the regional agricultural credit corporations will serve in an emergency capacity. After the local associations are organized, the regional agricultural credit corporations will be liquidated.

Cooperative marketing associations were given two sources of commodity funds, under the Federal Farm Board, aside from the private sources they used. They could obtain primary commodity loans from the intermediate credit bank, and supplemental loans on the same commodity out of the revolving fund of the Agricultural Marketing Act. The new arrangement avoids this duplication. All commodity loans may come only from the intermediate credit banks. The regional and central banks for cooperatives which are being set up by the Farm Credit Administration out of funds remaining in the revolving fund will be used for granting working capital and facility loans to the cooperatives.

The federal intermediate credit and the federal land banks will continue to operate as before, but the latter will handle the mortgage relief applications. It is aimed to liquidate gradually the joint stock land banks, so that there will remain only the federal land banks and their national farm loan associations as the source of long-term mortgage money under supervision of the Farm Credit Administration. The production credit corporations, banks for cooperatives, land banks and intermediate credit banks in each district will have the same directors, which will make for unity and planning of credit policy.

The objective of encouraging the establishment of many local, cooperative credit associations is to provide agriculture with a ready access to the money market on better terms than they might otherwise enjoy, through agencies adapted to the needs of farmers, managed by their agents, and for which they will be responsible. On that subject permit me to quote a statement I recently made over the radio.

"The credit system of the Farm Credit Administration is for farmers established on the soil. It is recognized that for some years past American farm production has been more than sufficient for the market. The credit administration has no means of encouraging new farm settlement and increased production. It exists to better the lot of experienced farmers, skilled in the practice of an occupation that demands a

November, 1933 Agricultural Education

Teaching General Agriculture

H. M. BYRAM, Iowa State College, Ames, Iowa

FOR THE past 16 years teacher trainers, supervisors, and other leaders in agricultural education have been devoting their energies almost exclusively to the improvement of secondary agricultural education in federally aided or Smith-Hughes departments. Little attention has been given to the hundreds of schools without agriculture of the federally subsidized type, although such schools far outnumber the others and are entitled to instruction of a high order in agriculture and rural life.

The 4,513 schools offering all-day work in vocational agriculture¹ to 143,079 pupils in 1932 represent less than one-fifth of the schools of the United States, and the pupils less than 3 per cent of the high school population. There are strong indications that this proportion will not increase greatly. The average annual per cent increase in enrollment in vocational agriculture classes² has just about equaled the average annual per cent increase in enrollment in all secondary education.³ There is no prospect at present of increase in federal funds for the work. In fact, this year we see a decrease in available funds, as a result of general retrenchments in governmental expenditures. Although a few states have been generous with their support for vocational education, there are still only 15 states which spend over \$50,000 annually.⁴

Even if federal aid were increased, there are many schools which could not qualify for it. Their enrollments are too small, their proportion of farm boys is too small, or for some reason the program as desired by those administering the funds does not, in the judgment of local administrators, fit in with the rest of the school program. Moreover, town boys and girls and farm girls are barred from the classes if they cannot conduct a productive project. Even if these students were allowed to enroll, the course would be ill-adapted to them. The average course in vocational agriculture, as taught, emphasizes production. Students not intending to enter farming are interested in agriculture from the general informational standpoint and from the standpoint of an understanding and appreciation of agriculture and rural life.⁵

Many States Offer General Agriculture

There are, of course, a number of states in which schools offer courses in general or non-vocational agriculture. For example, Iowa with 991 public high schools, had, in 1930, 111 schools offering vocational agriculture, but 690 schools offering one semester or more of general agriculture.⁶ Many of these were given to comply with a state law, enacted in 1913 and repealed in 1933, which required that the subject be offered in every high school in the state. Whether general agriculture will continue to be offered is a question, but there is every reason to believe that it will continue. Consolidated schools and normal-training departments are

still required to offer the courses. Further than this, Jerdeman found that the majority of superintendents in Iowa were in favor of it and, in fact, wanted more time for it.⁷

The most important limiting factor in the success of general agriculture in Iowa, Crawford found to be the teacher.⁸

Young folks, whether from town or country, whether boys or girls, like to and should study agriculture of a general or appreciative type. If the past few years have taught us anything, they have taught us that farmers will prosper to about the extent that city folks want them to prosper. We must have efficient farmers and farmers who can unite on definite cooperative courses of action to improve their economic environment, but unless there is a sympathetic understanding on the part of city people, unless there is a mutual recognition of the interdependence of town and country, they will get nowhere. Agriculture as a way of life and the problems and points of view of farmers need to be understood and appreciated by every citizen.

Teachers Not Available

One difficulty in giving a course in agriculture which will bring out these values arises from the fact that teachers are not available who can teach it properly. All of our agricultural colleges teach production in their subject matter courses, and the usual tendency is for the graduate to go out and teach the same thing. This is not what boys and girls want who are not going to be farmers. They want and need to be taught, not how to farm but how to live with and for farmers. A further difficulty is that the requirements for this type of agriculture course are usually low, and thus teachers trained for other subjects in liberal arts colleges or teachers colleges take on the agriculture course as an "extra." Many are town reared and not interested in agriculture, and the course fails.

Efforts have been made in Iowa to improve the teaching of general agriculture along three lines during the past five years. (1) A new curriculum was built for training teachers of general agriculture and science. (2) A course of study was made and given wide distribution. (3) Special assistance was made possible to the teachers through the securing of the services of an extension specialist.

The curriculum for the preparation of teachers of general agriculture and science was first inaugurated in 1928 and is now taken by more students than the curriculum for the preparation of vocational agriculture teachers. It includes, besides the general and supporting subjects, a major amounting to 45 quarter credits in agriculture and two minors of approximately 24 credits each. These minors are selected, under guidance, from a list of 16 and represent the second and third subject-matter fields which the student expects to

teach besides agriculture following graduation. The psychology and education required for state certification are included.

Objectives

In making the course of study the committee, composed of teacher trainers in the three state institutions, with Dr. W. H. Lancelot, chairman, first set up objectives stated in terms of interests, ideals, understandings, and abilities. They are as follows:⁹

1. An interest in agriculture and in country life.
2. An interest in the inter-relationships of town and country.
3. An interest in the laws of inheritance whereby constant improvement in plants and animals is being brought about.
4. The ideal of cooperation in serving the mutual interests of all classes of the community.
5. The ideal of making home surroundings beautiful.
6. The ability to identify common breeds of domestic animals.
7. The ability to control the general processes of life and growth of common plants.
8. The ability to control the general processes of life and growth of domestic animals.
9. The ability to control certain insect injury to plants and animals.
10. The ability to control certain common diseases of plants.

In setting forth these objectives, the committee indicated that the essential parts of the course should be "a study of the relationships that exist between town and country; of the interdependence of these two important members of every community; of the proper attitude of each group toward each other; and of their mutual obligations to cooperate with and help each other."¹⁰ The avocational values of the course were also stressed. The course is divided into 19 units. For each unit is given the specific unit objectives and a series of problems for realizing the objectives, together with statement of essential principles to be brought out and reference. The point of view set forth is

1. Sixteenth Annual Report of the Federal Board for Vocational Education, 1932, p. 67.
2. *Ibid.* p. 72.
3. Biennial Survey of Education in the United States, 1929-30.
4. Sixteenth Annual Report of the Federal Board for Vocational Education, 1932, p. 80.
5. Henry E. Irons, Characteristics of Pupils in General Agriculture Courses in Certain Iowa Schools. Unpublished thesis, Iowa State College, 1930, p. 78.
6. Casper M. Jerdeman, The Status of General Agriculture in Iowa Public Schools. Unpublished thesis, Iowa State College, 1930, p. 38.
7. *Ibid.* p. 57.
8. George E. Crawford, General Agriculture in the High Schools of Iowa. Unpublished Thesis, Iowa State College, 1925, p. 26.
9. State of Iowa, Courses of Study for High Schools: Agriculture. Iowa City, The Athens Press, 1932, p. 11.
10. *Ibid.* p. 11.

(Continued on page 71)

Authority was vested in the Farm Credit Administration by the Farm Credit Act of 1933 for setting up 12 production credit corporations, one to be situated in the same city as each federal land bank, and to have the same territories as those banks. The initial capital shall be \$7,500,000, but this may be increased or decreased according to the needs of each district. This money is furnished by the federal government out of a revolving fund of \$120,000,000.

The chief function of these 12 production credit corporations is to assist in the creation and advise in the management of local, cooperative credit associations which shall be sources of loans for carrying on ordinary farming operations. Their power to do this lies in their authority to subscribe to stock of local associations in an amount of 20 per cent of the loans made or which it is estimated will be made by such local organizations. The federal contribution may be increased above this 20 per cent if the Governor permits. Farmers seeking to borrow from government agencies will be encouraged by us to form a local association to provide for their needs. The associations may have their territorial boundaries described by the Farm Credit Administration. These boundaries will be defined so as to have as strong organizations as possible.

Favorable Terms

I expect that such local associations will obtain funds on relatively favorable terms. Their source of money will lie principally in the established borrowing power of the intermediate credit banks, authorized to discount for, or loan to such local associations. The intermediate credit banks obtain their funds from the sale of their debentures in the money markets. These debentures, which are secured by farm paper and other collateral, have usually always commanded low rates of interest. Intermediate credit banks are prohibited from charging in excess of 1 per cent above the debenture rate to the local cooperative credit association. The latter, in turn, is forbidden from charging the farmer-customer in excess of 3 per cent above the rate for the money which must be paid to the intermediate credit bank.

In many cases the local associations will charge less than the maximum spread of 3 per cent, especially after they have been operating long enough to build up the required reserves provided in the Act. This would prove of additional advantage to borrowers.

With the long record of success behind the intermediate credit banks, it is felt certain that the many local production credit associations to be established will provide the farmer with abundant money for all legitimate needs. Through the intermediate credit banks, the local associations will be able to reach right from the farm to the chief money markets of the country, on the highly respected security of the intermediate credit bank debenture.

Throughout the Farm Credit Act it is emphasized that the farmers shall be responsible for their own cooperative

credit agencies. Each borrower, as a condition to obtaining a loan, must subscribe to stock of a local association 5 per cent of the amount of the loan. This stock carries voting power. He retains that stock at least as long as he is in debt to the association, and may surrender it only to another farmer borrower or one eligible to borrow. While he is a borrower, he therefore has a personal pecuniary interest in seeing that the association is carefully managed, for capital stock may be impaired from any losses. It is my sincere hope, however, and that of my associates of the Farm Credit Administration, that the farmer will have a broader interest in his credit association than in merely protecting his small investment.

Farmer Ownership

Coupled with the objective that borrowers shall be responsible for their own organizations, is the idea that they shall eventually also be owned by their farmer borrowers. It is provided that after these organizations have operated for a time they will eventually supply all their own capital, and the government shall withdraw its financial contribution. This is possible under the Farm Credit Act. The farmer ownership will increase with the expanding membership and business of the association.

Another fundamental consideration is that these local production credit associations shall be permanent. Features of the law will work toward this end. No dividends may be paid until provision has been made for losses, for a reserve for losses and bad debts, and for a guaranty fund equal to 25 per cent of the paid-in capital.

When these permanent, cooperative, and farmer-owned associations have been organized throughout the country, there will then be no need for recourse to the government for direct loans for ordinary agricultural purposes, I hope. These direct loans are haphazard and undesirable, I think experience has shown. In the past they have been slow of collection and do not offer the farmer the same inducement to be self-reliant as the local association.

Same Principles for Cooperative Marketing

In the field of credit for cooperative marketing associations these basic principles will govern the work of the Farm Credit Administration also. Special institutions, the 12 regional banks, and the central bank for cooperatives are being established to provide for their peculiar needs. These agencies will have a capital to be fixed by the Governor of the Farm Credit Administration, and the funds will come out of the remainder of the revolving fund of the Agricultural Marketing Act.

The cooperative associations borrowing from the banks for cooperatives, like the production credit associations, must subscribe to the stock of the lending bank for cooperatives in an amount one-twentieth of their loans. Likewise, each local marketing organization will have a handy instrument for obtaining funds from the leading money markets

through the debenture of the bank for cooperatives, which will be similar in important respects to the intermediate credit bank debenture.

Provision is made that directors of the central bank for cooperatives shall be chosen from among nominees selected by borrowers. Finally, restrictions on the distribution of net earnings, similar to those governing local production credit associations, are made applicable to the banks for cooperatives. These require that before dividends shall be paid to stockholders, there shall be created a surplus and guaranty fund. This is designed, of course, to build financially strong, permanent institutions.

These means for constructing a nation-wide system of cooperative credit comprise the long-time approach to the farmer's credit problems. There is a more immediate problem at hand in the farm mortgage situation. All elements in Congress and the Administration unite in the belief that capable, independent farmers should be maintained on their farms. They should not become the workmen of large corporate farms, or a large class of tenants. It is, therefore, necessary to stem the foreclosures which otherwise would deprive legions of independent farmers of their occupations and homes.

Interest Rates

It is provided in the Emergency Farm Mortgage Act that the land banks may issue 4 per cent bonds up to a total of \$2,000,000,000 to refinance farm mortgages. Where these mortgages are made through national farm loan associations, they will carry a rate of only 4½ per cent interest for five years, against 5½ per cent, the average rate previously, while payments toward reduction of principal are not required for this five-year period. The interest rate on loans made direct by banks is 5 per cent for the five years. The same terms are given to nearly 400,000 farmers who are at present in debt to the land banks for more than \$1,000,000,000.

In addition, the Land Bank Commissioner of the Farm Credit Administration is provided with a fund of \$200,000,000 from which supplementary loans may be made to farmers whose debt is greater than that which can be handled with a first mortgage loan. First mortgages may be made for not more than 50 per cent of the value of the land and 20 per cent of the insured, permanent improvements thereon. This limitation provides for the best possible security behind the land bank bonds. These refinancing bonds are further made attractive by government guarantee of the 4 per cent interest. The Land Bank Commissioner may also loan to help farmers repurchase farms they have lost in foreclosure.

Through the land banks the government is according substantial aid to farmers now in debt to these banks, by a reduction in their interest payments for five years, and in a postponement in payments on principal for the same period. These banks may also refinance the indebtedness of farmers to

(Continued on page 73)



Supervised Practice



The Use of Supervised Practice Records in the Teaching of Vocational Agriculture

ROBERT D. MALTBY, Federal Agent, Agricultural Education, Washington, D. C.

IT IS A well known fact that the keeping of records and the making of reports is one of the most disliked activities known to man, and those engaged in agricultural education are no exception to the rule. On the other hand, every one seems to concede the fact that record keeping is essential to the successful conduct of business whether it be farming or running a store. However, the purpose of record keeping of a store keeper and of a farmer is usually quite different. For the average small store keeper, keeping books simply means keeping a statement of the accounts of his customers in order that he may collect the amount due. As the small store keeper enlarges his business and must hold his employees responsible for certain phases of his business, he then introduces a cost accounting system to check on these employees. For the farmer it means primarily the keeping of cost accounts in order to determine whether the business is paying or not and wherein losses occur, or profits accrue. Farmers, as a whole, charge to conditions over which they have no control, as weather, market prices, etc., their success or failure. If this were true, there would be no use of keeping records, as they would not be able to change the condition anyway. The fallacy of the farmer's thinking is, that business methods is more largely responsible for success or failure than he realized and, that, he has a very complex business similar to that of the growing store keeper.



Robert D. Maltby

sons why students of agriculture should keep careful record of their practical work and what they should do with the record. In the first place he is a student, and as a student he wants to learn all he can from supervised practice activities. He wants to know something as to the distribution of his labor, whether his labor has been efficiently done, the cost of the enterprise, as a whole and by parts, yields, quality of the product, profits, labor, income, etc. He must know these things if he is going to have any influence on increasing his returns in the future. He should also know the relation of costs to yields and quality of product. As a student of agriculture he should be satisfied with nothing but the facts, and, therefore, should want to keep such records and data that he may discuss his problems intelligently with his instructor or others interested in his work. From the writer's viewpoint there is no other way for the pupil to intelligently study his problem. Negatively there is no justification for a pupil to keep a record of his project just for the teacher to make a report to the state office. Negatively there is no reason for a pupil just keeping a record for filing, or because it is a "requirement."

Local Data for Teaching
Again, if the pupil's records are properly kept, the teacher will have a relatively large amount of local data that should be used in subsequent instructional work. Very little of this material is now being used, due, I believe, to the fact that the instructor is not completely satisfied either with its accuracy or its completeness. That the pupil's record is the source of a large amount of data used by the teachers for their annual reports to state offices is admitted, but we must not fall into the habit of thinking that the pupil is keeping a record to make the report of the teacher.
It may seem to the average reader that the writer is unduly critical of the present standards of record keeping by the teachers of agriculture. No one could go over the records from many states, as the writer has during the past fifteen years, and be otherwise. As a whole, it is the poorest thing the teachers are doing. Not only have the teachers had a very low standard for record keeping, but the inferences drawn from some of them are almost criminal, as far as education is concerned. For a boy to show a large profit on an enterprise in his project book when all of the cost items were not considered is giving the boy false information. Incomplete and inaccurate records cannot be justified.
There is just one more angle of the above problem that the writer wishes to mention at this time. He has little faith in the statement that the type

Ability to Interpret

It is my personal opinions that ability to interpret from records is far more important than ability to keep records. The fact that the pupil made fifteen dollars on a brood sow is of very little significance, but the fact that he made fifteen dollars profit on an investment of twenty-five dollars, or that due to one set of known conditions he made fifteen dollars and his fellow students made twenty dollars is important. The factor that curtailed his profits 25 per cent should be of vital interest to the lad who is going to make farming a business. A complete record of daily activities, costs, and receipts furnish only the facts which must be summarized, analyzed, and interpreted for future use. A record of this year's enterprise will add little or no increase to this year's returns. This year's record is primarily a guide for next year's plans.

Standard of Proficiency

From the teacher's point of view there are several factors that must be considered. He is teaching on the job basis whether it be out on the field during a project visitation, or in the classroom. It is the teachers' responsibility to see that his students reach a reasonable standard of proficiency in the doing of their jobs. The project record book

Teach Need for Record Keeping

The philosophy of teaching record keeping to students of agriculture then lies in the teaching the need for record keeping. The writer may be wrong, but he has the impression that most of the instruction in record keeping has been confined to methods of keeping records and stopped there. This theory is substantiated by the quality of the records that have been kept by students from all sections of the United States: The incompleteness of the record, the inaccuracy of the accounts, and the almost complete lack of any summarizing and interpretations of the record books could lead one to no other conclusion.
Let us analyze then some of the rea-

sons why students of agriculture should keep careful record of their practical work and what they should do with the record. In the first place he is a student, and as a student he wants to learn all he can from supervised practice activities. He wants to know something as to the distribution of his labor, whether his labor has been efficiently done, the cost of the enterprise, as a whole and by parts, yields, quality of the product, profits, labor, income, etc. He must know these things if he is going to have any influence on increasing his returns in the future. He should also know the relation of costs to yields and quality of product. As a student of agriculture he should be satisfied with nothing but the facts, and, therefore, should want to keep such records and data that he may discuss his problems intelligently with his instructor or others interested in his work. From the writer's viewpoint there is no other way for the pupil to intelligently study his problem. Negatively there is no justification for a pupil to keep a record of his project just for the teacher to make a report to the state office. Negatively there is no reason for a pupil just keeping a record for filing, or because it is a "requirement."

should be the place or one of the places in which the teacher records the grade the pupil is entitled to in the job he has performed under the direction or supervision of the teacher. These jobs are managerial as well as operative. The making of a decision is as much a part of his supervised work as the manual labor on the field or in the barn, and the teacher can check the skill the pupils show in the making of a decision as readily as the performing of some operative job. The actual decision the pupil makes is far less important than the procedure the pupil uses in making that decision. From the pupil's viewpoint the decision may have more immediate value, but from the standpoint of permanency the pupil's ability in the making of decisions is of paramount importance. The project record then, from the teacher's standpoint, should include all jobs performed by the pupil whether they are operative or managerial, and each given a grade by the instructor.

Local Data for Teaching

It may seem to the average reader that the writer is unduly critical of the present standards of record keeping by the teachers of agriculture. No one could go over the records from many states, as the writer has during the past fifteen years, and be otherwise. As a whole, it is the poorest thing the teachers are doing. Not only have the teachers had a very low standard for record keeping, but the inferences drawn from some of them are almost criminal, as far as education is concerned. For a boy to show a large profit on an enterprise in his project book when all of the cost items were not considered is giving the boy false information. Incomplete and inaccurate records cannot be justified.
There is just one more angle of the above problem that the writer wishes to mention at this time. He has little faith in the statement that the type

of record the pupil should keep is exactly like that a farmer should keep, no more, and no less. It should be all a farmer should keep and such additional data that a student should have. Neither is the writer in sympathy with the teacher who believes the pupil should make up his project record book from some blank book obtained from the "five and ten." Theoretically both of the above are correct, but experience proves beyond a doubt, in the mind of the writer, that the agricultural pupil is still a pupil and not a farmer, and, secondly, the home-made record books reviewed by me have not been a credit to anyone.
Let us all admit then that we have fallen down on this very important responsibility, and give the problem of record keeping and analyzing more thought and attention until we have brought it up to the same standard we have achieved in other activities of the program in vocational agriculture.

Let us all admit then that we have fallen down on this very important responsibility, and give the problem of record keeping and analyzing more thought and attention until we have brought it up to the same standard we have achieved in other activities of the program in vocational agriculture.

Project Stimulation Charts

CARL ROSS, Instructor in Vocational Agriculture, Eminence, Missouri

STIMULANTS have their place even in a course in vocational agriculture. It is human nature to slow up from time to time. Most boys will tend to lag behind at times, especially just after the newness of carrying a project has been experienced. It is the job of the instructor to detect the slowing up and to apply the necessary stimulant, if best results are to be obtained. This is especially true at critical stages of project supervision, such as lambing or farrowing time. One very effective method of applying the necessary stimulation to the project workers during these critical periods is by the use of charts similar to the ones here presented. These charts are made large enough so that they may be read from any place in the room. The stimulating factors in such a practice are obvious; the desire to excel is perhaps first in impor-

tance, although the idea of having one's fellows watch the details of the various approved practices charted is important, also there is the knowledge of progress.

Only a small amount of time need be used during each project study period to record the results of the various students for that week. This practice is a good one to use in beginning the project study period. The importance of planning is brought clearly to the students. If one is not to be outstripped by his classmates, then he must devise ways and means of keeping up. A glance at the charts will produce far more results so far as constructive planning is concerned than any amount of urging by the instructor. Likewise, the desire to save large litters and a large lamb crop will force the boy to give that little extra attention so important at farrowing or lambing time. This in itself will prevent many projects from becoming a failure. Few boys will have the courage to complete a satisfactory project after losing their entire litter or after saving only a 50 per cent lamb crop.

Summarizing the results that I have secured to date from the use of these charts, I would say that better project plans are being made, larger lamb crops and a larger per cent of the pigs farrowed are being saved, more approved practices are being used by the students, and better project results are very likely forthcoming.

Teaching General Agriculture

(Continued from page 69)

that little learning should be carried to the doing stage but only to the understanding stage. The course of study was tried out in a number of schools and revised before final printing and, according to reports, has been rather widely used throughout the state.

Professor J. A. Woodruff, the extension specialist referred to, has worked until the year just passed largely with elementary teachers of agriculture and teachers of agriculture in normal-training high schools. The past year he has worked more directly with other teachers of general agriculture, supplying information relative to references, visual aids, course of study materials, etc.

The teaching of vocational agriculture has undergone much change during the past twenty years and has improved greatly. It is the writer's opinion that it has improved more than the teaching of any other high school subject. We have not gone very far toward the improvement of instruction in general agriculture. To bring this teaching to a higher level will be more difficult, perhaps, but is just as worth while. It presents a real challenge to leaders in agricultural education.

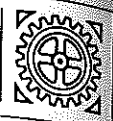
Life is made up of roads:
They start from where you are;
Some roads are ending near,
And some are leading far.
The road you choose means much
To others and to you:
'Tis not so much the road
As where 'tis leading to.—Selected

STIMULATION CHART USED WITH SHEEP PROJECTS

Name of Student	Ewes		Approved Practices Used to Date	Average Lambing Date	Lambs		Average Weight				Wt. of Wool
	Aged	Yearlings			Dropped	Saved	1st Mo.	2nd Mo.	3rd Mo.	4th Mo.	
Walter	13		13		1	1					
Luffton	20		13	March 1	17	16					
Verne	3	1	13	March 1	6	6					
Tom	14		14		1	1					
Wayne	20		12	Feb. 20	20	15					
Ralph	24	4	19	Feb. 15	24	21	19	33			
Seaman	2	1	9	Feb. 10	2	2	24	38			

STIMULATION CHARTS USED WITH SWINE PROJECTS

Name of Student	Breed	Number Pigs Farrowed	Number Saved	Approved Practices Used to Date	Average Weight				Cost Per Pound	Kind
					1st Mo.	2nd Mo.	3rd Mo.	4th Mo.		
Paul	Duroc J.	10	8	13						Sow
Blufford	Grade D-J.	8	8	12	20	42	74	96	\$.016	Sow
Tom	Duroc J.			4						Gilt
Denver	Grade D-J.	8	5	9	19					Gilt
Verne	S. Poland			4						Gilt
Denver	S. Poland	10	7	7						Gilt
Harold	S. Poland	5	5	7						Gilt
Roy	S. Poland			5						Gilt
Herbert(1)	S. Poland	6	6	19	20	47	80	101	.01	Sow
Herbert(2)	S. Poland	7	7	5	12					Gilt
Arthur	S. Poland			5						Sow
Blufford	Wh. Chester			5						Gilt
Willard	B. Poland	7	5	9						Gilt
Othe	Grade B. P.	8	8	9	20	32				Sow
Raymon	Grade C. W.	7	6	9	20	32				Gilt
Dick	Grade D-J.			6						Gilt



Organization, The Big Problem of the Teacher of Farm Mechanics

S. S. SUTHERLAND, Specialist in Agricultural Mechanics, California Polytechnic Institute

I AM TEACHING every period of the school day. I have larger classes this year than ever before, and less time for preparing them. My shop equipment is inadequate. There aren't enough benches, vises, or tools to go around. In spite of my best efforts, at the end of the school day my shop looks as though a small cyclone had struck it. They've cut out our janitor service, and my shop gets swept out only once or twice a week. There are unfinished projects in the middle of the floor, on the benches, under them, in every corner, and some of them have overflowed out into the back yard. I'm rushed to death every minute I'm in the shop. I've got to provide work for those boys who can't seem to get projects for themselves, and while I'm hunting up work for them, those who have projects of their own are held up because I can't find time to help them. At the end of the day, I'm "all in." I want to get away from that shop and forget it when school is over for the day.

HOW CAN I ORGANIZE MY WORK SO THAT I CAN SAVE MYSELF, DO A BETTER JOB OF TEACHING THESE BOYS, AND KEEP MY SHOP IN SUCH SHAPE THAT I WON'T HAVE TO APOLOGIZE FOR IT EVERY TIME A VISITOR DROPS IN?

Is this your problem? If so, the following suggestions may assist you. They are offered, not as a "cure-all," but to summarize some of the more obvious things that may be done to better this situation.

If you would have an orderly shop:

1. Stage a clean-up day about once a month. Forget routine; call each class together and discuss what needs to be done; assign each group to a specific task and get rid of the month's accumulation of spider webs, soot, shavings, and scrap iron. A class that cleans up once and realizes how much work is involved won't be so apt to make unnecessary dirt.

2. Let these boys who don't have projects spend part of their time building and repairing shop equipment. Even the poorest of them can make vise handles, shelves for storing equipment, etc.

3. Hold pupils responsible for cleaning up their own "dirt". If a group of boys are repairing a machine, require them to sweep up the caked grease, shavings, etc., and arrange parts neatly in order before leaving. Allow time for this and see that it is done.

4. Set a good example for them by keeping your desk and office orderly and clean.

5. Paint the walls of your shop or have them painted. And don't stop there. Select a standard color and have your saw horses, shelves, and cabinets painted to match the walls. Painted surfaces are far easier to clean and keep clean than unpainted surfaces.

6. Eliminate, as quickly as possible, all convenient "catch-alls" for scraps and dirt. Make storage cabinets with slanting tops so that scraps won't accumulate there; enclose with doors the spaces under benches so that it won't be so convenient to throw scraps of lumber and iron under them.

7. Build a scrap box for short pieces of lumber, and use it. Do the same for scrap metal.

WORKING ENVIRONMENT HAS A POWERFUL INFLUENCE ON THE MORALE OF A CLASS. The same boys taken from a dingy, dirty, unfinished shop will do materially better work in a shop that is light, clean, and painted. Also a clean shop tends to stay clean, and a dirty one gets dirtier.

If you would save yourself unnecessary time and effort:

1. When you demonstrate any important skill or explain any important principle, do it for the entire group—not for one lone boy.

If a pupil is using a file incorrectly, don't correct him only. Call the entire group and take time out to discuss and demonstrate the correct way. Use this technique often. Our main objective is not to get the work done—it is to teach.

The use of this plan will go far toward eliminating repeating the same instruction time after time. It is a labor-saver and it is good teaching.

2. Organize your shop and your work so you can see every pupil all the time. Each partition in your shop more than doubles your work. A good class in two separate rooms is bad—in three rooms, it's impossible!

3. Set aside a few minutes at the beginning of shop to "talk things over," to organize the work for that day. Nothing is more important for the success of a class than a good start.

The ideal farm shop class should run like a modern automobile. The instructor, as the motor, furnishes the impetus at the beginning of the shop period, anticipating the demonstrations and the facts needed and bringing these to the group who, like a free-wheeling car, should run on their own momentum for most of the period, with a minimum of effort on the part of the instructor. Too many classes are geared too rigidly to the motor and dependent entirely on him for their progress. As long as

the motor (instructor) can keep up, the class functions. Take him away or stop him, and the class slows down.

Arrangement of Tools in the Farm Shop

A. T. LEWARK, Agriculture Instructor, Blacksburg, Virginia.

ONE OF THE ever present problems of the agriculture teacher is the storage of the shop tools. Storage arrangements should meet two requirements: first, convenient, in order that the least possible time is consumed in replacing the tools; and second, easy to check when class is closed, or at any other time.

The writer has had experience with three different methods of shop tool arrangement. First, when the shop equipment consisted of individual benches with a tool drawer underneath containing individual sets of tools. Some tools, such as jointer plane, hack saw, expansion bit, carpenter's clamps, and others not often used were kept in a cabinet or other place where the class as a whole might have access to them. The tool drawers and cabinets could be locked, thus providing a measure of safety. A part of the tools by this arrangement were convenient enough, but the matter of checking them became irksome. I consider this a very serious objection, for the time consumed in checking over the tools in the drawers and cabinets is too valuable to spend in this way. Tools should be checked at the close of each shop class, in order to fix responsibility should any be missing. Another difficulty in checking tools in drawers is that there often accumulates in the drawers other materials, such as unfinished work, scraps of boards, and shavings, which add to the time consumed in checking. It thus appears that by this method convenience is had at the expense of time.

Another method of tool arrangement used was to provide a cabinet or cabinets sufficient to hold all tools. Hooks, shelves, racks, etc. were provided on which to support the tools in some orderly fashion, but here again the time consumed in checking, even when only one cabinet is used, is too great. Supposedly each tool has its particular place in the cabinet, but too often one finds this not to be the case. Boys are not prone to keep tools in orderly arrangement, and the interior of the cabinet generally reveals a mass of tools which the instructor is obliged to place in order before he can determine whether tools are missing.

The most satisfactory arrangement of tools, according to the experience of the writer, is to have them all placed on a smooth board wall painted white. Tools are arranged so that the longest ones, such as saws, yard sticks, level, etc., are placed at the top and hanging down. A carefully arranged plan should be

followed in placing the tools, and when this has been completed, place the tools in position and mark the outline of each with pencil and then fill in this outline with black paint. The object of this is to simplify checking. A glance at the board will show if any tools are missing. When the class period is over and the order, "tools away" is given, the instructor takes his place at a convenient distance in front and watches the tools go into place. Should any be missing, he knows at a glance what it is, since the outline of the tool is there. When all tools are in place, the instructor announces "class excused." It is understood that the class is held until all tools are in place on the board. Thus checking is completed with no loss of time and no handling of tools. Real satisfaction comes to the instructor when this is done. Moreover, by this arrangement one may see instantly on visiting the shop at any time whether all tools are in their places and what tools, if any, are missing.

In addition to convenience and saving time, this plan has another feature to commend it. When a boy wishes to take a tool home for a day or two, he puts his card on a hook on which the tool was supported, and it remains there until the tool is returned. Here again, much time and trouble are saved, for the boy makes his own ticket from a supply of cards on hand and thus saves the instructor the trouble of making an entry in his records.

The Farm Credit Administration

(Continued from page 68)

others, at the same favorable terms, and besides there is a large fund from which supplementary loans may be made in order to facilitate refinancing. These broad provisions will do much to maintain the capable farmer on his farm in these distressing times.

Strenuous efforts are being made by the Farm Credit Administration to hasten the operation of these relief powers. The force of appraisers of the land banks has been increased from only 210 about April 1 to over 1,700 September 1. These men can shortly handle a volume of business approximately equal to the number of applications received currently. This force, moreover, is being increased all the time with a view to making a substantial weekly reduction in the accumulated 184,000 of mortgage applications on hand August 31.

Likewise, the establishment of credit facilities for farm production and for cooperative marketing associations is going ahead. Production credit corporations and regional banks for cooperatives have already been established at St. Louis and Berkeley, and additional institutions probably will have been set up by the time of publication. The central bank for cooperatives will soon be functioning.

The Farm Credit Administration is working on the immediate and the long-time credit problems of farmers. It is seeking to prevent many losses of farms through foreclosure, and it is assisting in the building up of solid, permanent, cooperative credit institutions which

Current Problems in Teaching Farm Mechanics

LESTER B. POLLOM, State Supervisor, Vocational Agriculture, Topeka, Kansas

IT IS readily appreciated that the problem of securing a suitable range of farm mechanics jobs and skills has been extremely difficult during the past two years. No doubt this difficulty will remain through the coming year at least. This has resulted, in many cases, in depending entirely on the jobs brought from the home farm to make up the content of the year's work in farm mechanics. This method is most desirable, provided the teacher counsels with the boy and perhaps the parent, and makes reasonably sure that the year's work includes a proper range of what might be termed basic skills in shop work. Too often, it has resulted in the boy's bringing in jobs of such nature that the same skills were repeated many times, to the exclusion of other skills that seem equally important. The result is overemphasis on some types of shop skills and the almost total neglect of others. Many jobs have been brought to the shop and accepted because they involved little or no expense although their educational value might be questioned.

It is an ideal situation when boys, through the help and guidance of their teacher and cooperation of the parent, bring from the home farm a range of practical farm shop jobs that involve all of what might be considered the basic skills in farm shop enterprises. On the other hand, when work is brought in without such guidance, the balance in shop training is endangered. It then becomes the teacher's responsibility to see that other means are used to insure the boys' acquiring at least a minimum amount of work in what the teacher considers to be a suitable range of basic farm shop skills.

What are Suitable Minimums?

Probably each teacher should determine in his own mind just what minimums he should require from each boy in such things as carpentry, hot iron work, cold iron work, sheet metal work, rope work, harness repair, glazing, painting, and concrete work. This is particularly true of the beginning classes. If, for example, the teacher decides the minimum experiences which a boy should have in cold iron work include measuring, marking, bending, cold cutting, hack sawing, center punching, boring with drill press, riveting, filing, and use of taps and dies, he should strive to see that each boy acquires at least some experience in each of these skills. Such minimums should be established in other types of shop work. If this is done, it will constitute a long step to-

ward achieving a more reasonable balance in our shop instruction. When the home farm does not afford jobs of suitable range of skill, it becomes the responsibility of the teacher to provide jobs from other sources or, as a last resort, provide exercise work involving these skills. Needless to say, a system of records that will show the skills each boy has acquired should be kept up to date. This affords the teacher an opportunity to keep a day-to-day check on the boy's shop activities, and lessens the likelihood of unbalanced shop training.

It has been somewhat disappointing in some cases to note little or no difference in the type of work being done in the shop by the beginning class and the advanced class. If the teacher has thought through carefully the content of his farm mechanics course, boys of the second year will usually be found with jobs bigger in scope, such as farm machinery repair, gas engine repair, study of mechanical advantage and devices, study of power transmission problems, farm drainage and terracing, and farm water supplies. The advanced boy, of course, will be applying skills in woodwork, iron work, sheet metal work, etc., which he acquired the previous year, but in advanced work these skills appear as contributing factors in a bigger job rather than as a repetition of what has been covered the previous year. Some teachers need to give considerable thought to a system for progressively advancing students in shop skills. The teacher himself must decide in what order these jobs should be attacked.

A study of records, together with observations made during the year, indicates a lack of emphasis in teaching proper tool operation. No doubt this can be accounted for in that the type of practical jobs in many cases did not lend themselves to effective teaching of tool operation. General observation of farm mechanics work in the various schools leads one to the conclusion that a number of teachers can well afford to give more time to the study of good farm mechanics text and reference books, for their own individual improvement. Many teachers can justify more extensive use of such texts and reference books as a basis of systematic instruction on basic mechanics principles, tool operations, and tool care.

We do not mean to be overcritical. The underlying cause of most of the difficulty of farm mechanics teaching is easy to recognize. It is highly important that all teaching activities be kept on the highest possible plane even though it require much more thought and effort on the part of the teacher than is required in normal times, since our work is subject to more critical analysis in trying times.



Summary of Measurement Studies in Agricultural Education

H. M. HAMLIN, Iowa State College.

MEASUREMENT studies have received an unusual amount of attention at the hands of research workers in agricultural education. Seventy-five studies are here summarized, the original reports of which comprised more than 4,000 pages. The following outline will be used in the discussion of these investigations.

- I. Surveys
 1. Surveys to determine community needs
 2. Surveys to determine changes resulting from instruction in vocational agriculture
 3. Evolution of survey technique
 4. An evaluation of the survey as a means of measurement
- II. Studies of Graduates
 1. Occupational distribution
 2. Farming careers
 3. College careers
 4. Attitudes
- III. Measurement of Outcomes of Work with Organized Class Groups
 1. Achievement tests for high school classes
 2. Results from supervised practice
 3. Results from evening school instruction
- IV. Miscellaneous Measurement Studies
 1. Ratings of departments and teachers
 2. Measurement of results of supervision
 3. Comparative accomplishments of farm and village boys in high school
 4. Studies involving the use of intelligence tests
- V. Discussions of Measurement Technique
- VI. Present Status of Measurement in Agricultural Education

SURVEYS

1. Surveys to Determine Community Needs

Community surveys were among the earliest measuring devices used by teachers of agriculture. Scientific studies based upon community surveys were among the first such studies in the field. Armstrong, in 1919, discussed at some length the uses which the teacher of agriculture might make of the community farm survey.¹

In 1923 Getman described rather detailed surveys at Richmond, Illinois, and Geneva, New York.²

Wiseman reported in 1924 upon studies he had made in South Dakota of the farm home and social experiences of boys in vocational agriculture, showing how information of this type might be used in planning their education.³

In 1920 Buckton made the first of a series of studies at Iowa State College,

In the November issue of this magazine appeared the summary of studies in part-time instruction. In the August issue of this year was presented the summary of studies in evening school instruction. Beginning on this page is the summary of measurement studies in agricultural education. Four thousand pages of original manuscript are summarized in this article. All teachers should be interested in one or more measurement studies. Persons who have worked on measurement, or who expect to work on measurement should find this summary especially helpful.—Editor

all of which involved the use of surveys to determine community needs and included the formulation of courses of study based upon the survey data secured.⁴ Forty-two farms in a small community near Ames, Iowa, were studied. A survey form requiring two hours for filling out was used on each farm. Data covered the year from March 1, 1920 to March 1, 1921. The more significant findings may be summarized as follows:

1. Hog enterprise
 - a. Only nine farmers raised more than one litter per year.
 - b. The average number of sows farrowing spring pigs was 4.75 sows per farm.
 - c. The average size of the spring litters was 5.6 pigs
 - d. On the average, 4.8 pigs per litter were raised to a weight of 100 pounds
 - e. Only 12 farmers fed mineral mixtures
 - f. Only eight farmers used self-feeders
2. Dairy enterprise
 - a. The median number of cows milked was four; no farmer milked more than nine cows.
 - b. No animals of the strictly dairy breeds were kept.
 - c. Only one farmer fed alfalfa hay.
 - d. One herd had been tested for tuberculosis
3. Beef enterprise
 - a. Only three farmers had bought feeder steers.
 - b. Three of the 11 farmers raising beef cattle fed silage.
 - c. Two beef herds had been tested for tuberculosis.
 - d. Two farmers held their steers until three years old.
4. Horse enterprise
 - a. Only nine colts had been foaled during the year on the 42 farms.
5. Sheep enterprise
 - a. Five of the 42 farmers kept sheep, a total of 27 ewes.
 - b. Only one of the five farmers provided rotating pastures.
6. Poultry enterprise
 - a. Practically all of the farmers fed their laying flock nothing during the

summer, expecting them to pick up their feed about the farm.

- b. Twenty farmers fed only corn and oats during the winter.
- c. Thirty-three of the poultry houses were built without any special provisions for ventilation.
- d. Seventeen farmers did not cull.
- e. There was a loss from disease of 1,181 birds during the year.
7. Corn enterprise
 - a. Only 23 farmers had selected their seed early.
 - b. Five farmers had not tested their seed.
 - c. The average acreage was 63.2 acres; the average yield, 49.5 bushels.
 - d. The range in acreage was from 5 to 195 acres per farm.
 - e. Nearly all corn was husked. Much of it was sold. The median amount sold was 650 bushels, the range from 100 to 8,000 bushels.
8. Oats enterprise
 - a. The average acreage of oats was 43.3 acres; the average yield was 46 bushels.
 - b. No farmer had treated his oats for smut.
 - c. Thirty-two of the 42 farmers had sold some oats. The median number of bushels sold was 750.
9. Wheat enterprise
 - a. Only three farmers raised wheat.
 - b. The average yield was 16.9 bushels.
10. Barley enterprise
 - a. Only one farmer grew barley; his average yield was 4 bushels per acre.
11. Pastures
 - a. Forty-one of the 42 farmers reported no provisions for keeping up their pastures.
 - b. Permanent pastures were commonly used; pastures in rotation were seldom used.
12. Soils
 - a. Only two farmers had tested their soil for acidity.
 - b. Only seven farmers grew legumes, and but one plowed any of them under.
 - c. One acre in 80 in the community was in legumes.
13. Buildings and equipment
 - a. Twenty-seven farms were without running water.

1. F. E. Armstrong. The farm survey as a source of information for the teacher of agriculture. *Vocational Summary*, 2:138, 144, October, 1919.

2. A. C. Getman. Interpreting local practices in building agricultural curriculums. *Vocational Education Magazine*, 1:652-57, May, 1923.

3. C. R. Wiseman. Farm home and social experiences of farm boys. *Vocational Education Magazine*, 2:806-08, June, 1924.

4. La Verne Buckton. A course of study in vocational agriculture based on a survey of the South Jordan community. Master's thesis, Iowa State College, 1921. 132 pp.

- b. Thirty farms had no bath or toilet.
- c. Twenty-eight farms were without electric lights.
- d. Thirty-two farmers used stoves to heat their homes.
- e. Many of the out-buildings were inadequate for the purposes or were in poor repair.
- f. Only ten farmers had silos.
- g. Twelve farmers had tractors. They had used these tractors 15 to 100 days during the year; the median period of service, 37.5 days.

Similar studies, designed to discover community needs and to develop high school courses in vocational agriculture based upon them were carried out at Iowa State College by Moyers,⁵ Washington,⁶ Ambrose,⁷ Morgan,⁸ Pickett,⁹ McDonald,¹⁰ Kies,¹¹ Smith,¹² and Nelson.¹³

The studies of McDonald and Kies are of interest in that they included attempts to set up standards toward which their communities might work, by taking the averages on the several criteria for the ten farmers most proficient in each. McDonald's findings may be summarized as follows:

1. The ten highest corn yields averaged approximately 9 bushels per acre above the community average.
2. The average yield of oats was 9 bushels below the average yield on the ten farms with highest oats yields.
3. The average yield of wheat was about two-thirds that of the average of the ten highest yields.
4. The ten best producers of pork averaged about 1,200 pounds of pork per sow; approximately twice the general community average.
5. The ten best producers of butter-fat averaged more than 50 pounds of butter-fat per cow above the community average.
6. The community average for egg production was less than 60 per cent of the average production of the ten highest producing flocks.

Kies compared the average with the ten best farmers in each respect in his community, as follows:

	Average Ten Best	
Sweet clover per farm, acres	1.7	6.7
Alfalfa per farm, acres	8	3.3
Percentages of high-carrying pasture	4.7	25.7
Butter-fat per cow, pounds	182.8	279.5
Eggs per hen	92.3	135.8
Pigs per sow farrowed	7.4	8.2
Pigs per sow raised to six months	5.4	7.3
Average weight of pigs at six months, pounds	144.5	180.1
Pounds of pork per sow	785.8	1,312.4

Barker made a study in 1928 of the differences in pork-production efficiency of an evening school group of 33 farmers at Huxley, Iowa.¹⁴ He found that the average production in terms of pounds of pork per sow was quite uniformly distributed from 266 pounds on one farm to 1,567 pounds on another. The average number of pigs farrowed per litter varied from 5 to 12.6. The percentage of loss ranged uniformly from 0 to 55.5 per cent. The number of

pigs per litter raised to six months of age varied from 2.2 to 8. The average weight at six months varied from 90 pounds to 194 pounds.

2. Surveys to Determine Changes Resulting from Instruction in Vocational Agriculture

As the work in vocational agriculture continued, investigators came to use the devices formerly employed to determine community needs, in measuring changes which had come about through vocational agriculture.

Studies of this type by Miller¹⁵ and Stephenson¹⁶ in two neighboring Iowa communities apparently led the way. These men took successive annual surveys of their communities, and between surveys worked intensively toward improvement in certain definite respects. In the Dana community the emphasis was given to increasing the pounds of pork per sow, the percentage of land in alfalfa, and the production of eggs per hen. Increases over the two-year period were:

1. The average production of pork per sow increased from 789 pounds to 1,032 pounds.
2. The percentage of land in alfalfa increased from 0.9 per cent to 1.1 per cent.
3. The production of eggs per hen increased from 60 to 72.8 eggs.

Stephenson made a contribution in connection with his study, in developing a plan whereby the survey could be taken by class members and could be made of use to them. His procedure, which made possible practically 100 per cent coverage of the community with little expenditure of time by the teacher, has been used in nearly all Iowa surveys since.

Clark reported a similar study in 1928 of the Bondurant, Iowa, community.¹⁷ The period studied were discovered as follows:

1. From 1924 to 1927, the number of farms growing alfalfa increased from 2 to 22, the number of farmers applying limestone from 2 to 19, the number of farmers growing sweet clover from 4 to 34, and the number of acres of sweet clover from 64 to 894.
2. From 1924 to 1926, the percentage of land in legumes rose from 2.5 to 8.1, the percentage of land fertilized from 11.4 to 15.4, the percentage of chicks hatched before May 1 from 49.1 to 76.2, the percentage of chicks raised from 56.4 to 72, and the number of eggs per hen from 57.8 to 94.7.

Meanwhile Lancelot and Hamlin had been working with a group of central Iowa instructors on a measured program for the increase of legume acreages. Their report, made in 1928,¹⁸ showed:

1. Distinctly larger increases in legume acreages of those persons in each of the six communities who had been in direct contact with the programs in vocational agriculture.
2. Distinctly larger percentages of land in legumes in the communities having vocational agriculture than in the counties as a whole in which these communities were located.
3. Very large increases in acreages between the first and latest surveys in

each community, the length of time between surveys varying from one to six years.

4. The changes in acreages on the farms of persons included in two or more surveys were similar to the changes in general community averages, indicating that the communities have been fairly sampled.

Measured changes in one of these communities have been reported separately by Bunyard.¹⁹

Hausrath, in 1929, contributed a summary of the Iowa survey studies, together with a critical analysis of the Iowa survey plan of measurement.²⁰ He checked particularly upon the accuracy of the survey returns obtainable by the procedure generally in use for getting data. He secured data from the same farms a few weeks apart to determine discrepancies. He compared data secured by the schools with those secured by the township assessors covering the same farms. He compared changes on farms included in two surveys with changes in the general community averages, to determine the fair-

5. Albert Edison Moyers. A course of study in vocational agriculture for the Sidney consolidated schools, based on a survey of the farms in the district of Sidney. Master's thesis, Iowa State College, 1922. 163 pp.

6. William H. Washington. A course in vocational agriculture for Fairfield high school, based on a survey of the farms of the community. Master's thesis, Iowa State College, 1922. 171 pp.

7. Nathan F. Ambrose. A course of study in vocational agriculture for the Roland consolidated schools, based on a survey of the farms in the district of Roland. Master's thesis, Iowa State College, 1922. 81 pp.

8. Barton Morgan. A curriculum in agriculture based upon a survey of the Okoboji Township school district. Master's thesis, Iowa State College, 1923.

9. Louis J. Pickett. A course of study in vocational agriculture for the Seymour high school, based on a survey of thirty-one farms in the community. Master's thesis, Iowa State College, 1923. 191 pp.

10. Charles B. McDonald. Community farm survey at Coburg, Iowa. Master's thesis, Iowa State College, 1926. 102 pp.

11. Theodore T. Kies. The place of general agricultural instruction in the consolidated school as shown by a survey of the Prescott community, Adams County, Iowa. Master's thesis, Iowa State College, 1927. 80 pp.

12. Andrew N. Smith. A survey of the social and agricultural conditions in the Garden Grove community. Master's thesis, Iowa State College, 1927. 198 pp.

13. Arvid E. Nelson. A program for the agricultural development of the Woodward, Iowa, community. Master's thesis, Iowa State College, 1929. 105 pp.

14. Paul I. Barker. Results of hog survey on the farms of the 1928 hog school membership. Mimeographed, Department of Vocational Education, Iowa State College, 1928.

15. Adam Miller. A study of the community farm survey as a means of improving agriculture, based upon three surveys of the farms in the Dana, Iowa, community. Master's thesis, Iowa State College, 1926. 95 pp.

16. Earl R. Stephenson. A study of the community farm survey as a means of improving agriculture in the Paton, Iowa, community. Master's thesis, Iowa State College, 1926. 95 pp.

17. B. Frank Clark. The use of the community farm survey as a means of improving agriculture in the Bondurant, Iowa, community. Master's thesis, Iowa State College, 1928. 80 pp.

18. General community changes during school instruction through changes in community practice. *Journal of Educational Research*, 18:315-17, November, 1928.

19. C. I. Bunyard. Changed practices due to vocational agriculture. *Agricultural Education*, 3:19, August, 1930.

20. Alfred H. Hausrath, Jr. A study of the reliability and the significance of the Iowa community farm survey. Master's thesis, Iowa State College, 1929. 152 pp. (Mimeographed abstract available from the Department of Vocational Education, Iowa State College.)

ness or sampling. His conclusions were that:

1. The Iowa community farm survey is not a satisfactory means of discovering the inefficient practices of individual farmers or of measuring progress on a single farm.

2. Community averages from such survey data are relatively accurate.

3. Progress in increasing the production of pork per sow had been two and a half times as great in the communities having vocational agriculture as in the communities studied which did not have it.

4. The group in each community not reached by instruction in vocational agriculture lagged behind the instructed group about one year in their progress as measured by surveys.

5. Even those in vocational agriculture communities not directly reached with instruction progressed faster than the average of persons in communities having no vocational agriculture.

W. F. Stewart of Ohio State University made an intensive study of the Iowa survey plan in 1927 and worked out an adaptation of it for use in Ohio. The most thorough study utilizing the Ohio technique has been a joint study he has conducted with Bruner.²¹ The principal departure from the Iowa plan was in securing the data entirely through records, rather than by annual surveys.

Swaney has used a procedure similar to the Iowa plan in a study of the results of teaching vocational agriculture in Missouri.²² One county was selected for study, and comparisons were made of four types of farms:

1. Sixteen farms upon which former students were living.

2. Twenty farms from which boys were currently enrolled in vocational agriculture.

3. Twenty-three farms in communities having vocational agriculture which had not been reached directly with instruction.

4. Sixty-seven farms in communities not maintaining departments.

It was found that the various groups ranked in the order listed when measured in terms of approved practices, production, and other measurement factors, the farms on which students and former students were living excelling markedly the farms which had not been reached by vocational agriculture.

Glenn compared two Virginia communities in the same county, one of which (Kenbridge) maintained a department of vocational agriculture while the other (Victoria) did not.²³ Surveys were taken in each in 1923 and again in 1929, and the progress between surveys was noted.

The area with instruction in vocational agriculture apparently made much more progress, especially as regards more balanced farming. Most progress was made in those farm practices emphasized in the teaching program for the all-day and evening groups. The teaching program formulated on the basis of the 1923 survey called for a reduced tobacco acreage, increased food and feed crops, and more livestock. Some of the specific findings were as follows:

1. **Tobacco.** In the Kenbridge district, a reduction of 1.4 acres per farm; in the Victoria area, a reduction of only .7 acre. The Kenbridge farmers increased their yields by 40 pounds per acre, while there was an average reduction of 116 pounds per acre in the Victoria section.

2. **Cotton.** Cotton had not been an extensive cash crop in the country. It increased in the Kenbridge area by 2.8 acres per farm, and the average yield increased 58 pounds per acre. In the check area there was an increase of only .19 acre per farm, and a decrease in yield of 56 pounds per acre.

3. **Legumes.** In the Kenbridge area the acreage of legumes was practically doubled during the six-year period, while there was a slight decrease in acreage in the Victoria area. The Kenbridge farmers used approximately 480 per cent more lime during the period, 1924 to 1929, than they did during the five years ending 1923. The Victoria farmers increased their use of lime by only 100 per cent.

4. **Livestock.** There was no increase in the number of dairy cattle in the Victoria district, but the number in the Kenbridge district was doubled. In the Kenbridge area there was an increase of 65 hens per farm, and an increased egg yield of 26 eggs per hen. In the Victoria section there was an increase of seven hens per farm, and three eggs per bird.

5. **Livestock practice.** Apparently no farmers in either district were feeding balanced rations to poultry in 1923. In 1929, 68 per cent of the Kenbridge farmers were feeding balanced rations, while only 20 per cent of the Victoria farmers were doing so.

6. **Crop diseases.** In 1923, 40 per cent of the Kenbridge farmers and 62 per cent of the Victoria farmers were using crop disease control measures. In 1929, 80 per cent of the Kenbridge farmers and 56 per cent of the Victoria farmers were following desirable practices in this respect.

7. **High school students.** Ninety-four per cent of the Kenbridge farm boys entered high school and remained for an average of 3.5 years. Seventy-six per cent of the Victoria farm boys entered high school, remaining in high school an average of 2.6 years. Eighty-nine per cent of these farm boys remained on farms in the Kenbridge area, compared with 50 per cent in the Victoria area.

3. Evolution of Survey Technique

It is evident from the foregoing discussion that the survey has undergone a marked transformation as a measurement device since its first use by teachers of agriculture. These changes may be indicated under the following four heads:

Changes in the form and make-up.—The earliest surveys were made up hurriedly by the teachers using them. They contained many poor questions, unsuited to secure with certainty the information desired. Many of the surveys were entirely too long. They were not planned to make possible comparisons with future conditions in the community or comparisons with other communities.

Recently the tendency has been to have the survey forms prepared by persons who have special qualifications for the task. Printed sets are made up at one central point in a state, and a central set of records is maintained at that place. This insures better forms and more use of the data collected.

Changes in methods of taking surveys.—The first surveys were commonly taken by the teachers themselves. This required much time. Often an approach by the teacher to a farmer to secure survey data was the worst possible approach he might make, since many farmers resented inquiry into their affairs. Recently the data have been secured largely through members of all-day, part-time, and evening class members. When these groups are large, data from their farms alone present a good cross-section of the community. These students have also been found able and willing to secure accurate survey data from their neighbors. A further improvement in methods of securing data has come about through the encouragement of the keeping of records by farmers, which yield more accurate data than have otherwise been available.

New methods of analyzing survey data.—It has been found possible to analyze the data from surveys in ways formerly not attempted. The general summary of the local community situation was at first the only thing sought. Now, comparisons are made between the community surveyed and other communities, with and without departments of vocational agriculture. Persons in the community who have received instruction are compared with those not reached. Farmers reached through evening classes are compared with farmers reached less directly through the membership of their sons in day and part-time classes. Standards for the community are set up on the basis of the accomplishments of the best farmers.

New criteria of farming efficiency, based on survey data, have been evolved. One of the best of these is "pounds of pork per sow," an index of the efficiency of the swine enterprise, which has been found to have an almost perfect negative correlation with the cost of producing pork.

New uses of survey data.—The earliest surveys were used mainly as diagnostic devices, to indicate to the teacher the nature of the community program to be undertaken. Later it was found that survey data were of much use in teaching, and that the taking of the survey by class members was an excellent educational device. One of the most important recent uses has been in measuring the results of instruction through the comparison of successive surveys.

21. W. H. Bruner. A measurement of swine management in the Montpelier, Ohio, community. Department of Agricultural Education, Ohio State University, 1928. Mimeographed, 8 pp.
22. Lester B. Swaney. The results of vocational agriculture as measured by the adoption and continuation of approved practices. Department of Agricultural Education, University of Missouri, 1930. Type-written, 32 pp.
23. H. A. Glen. Some effects of vocational agriculture in Lunenburg, County. Master's thesis, Virginia Polytechnic Institute, 1932, 131 pp.

4. An evaluation of the Survey as a Means of Measurement

It is clear that the survey has provided a valuable measuring device. It is clear also that too much importance has, in some cases, been assigned to it. It can provide only a partial measure; it does not touch at all some of the more important outcomes of instruction. Its use as a measure tends, if we are not careful, to get us to thinking of progress in terms of improved plants, animals, and soils, rather than in terms of improved human beings. If we build our curricula on the basis of surveys alone, we incline to overemphasize current, local problems and to fail to prepare those we teach for the long future ahead of them with its great diversity of problems. Lawson has perhaps stated best the precautions which should be taken in using the survey as a means of measurement.²⁴

Discussions of vocational agriculture frequently seem to stress tons of limestone, acres of legumes, eggs per hen, and the like as objectives, while the point of view taken here refers to human abilities as the objectives. . . . The true purpose of all teaching, vocational or general, is to stimulate and direct the acquirement of worthy controls of conduct on the part of human beings. All those more tangible and concrete aspects of agricultural education, i. e., acres, yields, tons of limestone—often referred to as objectives, are closely related to the true objectives—i. e., human abilities—but they are means to an end, steps on the way to the development of human controls of conduct.

II

STUDIES OF GRADUATES

1. Occupational Distribution

The occupational distribution of persons who have taken courses in vocational agriculture has always been of much concern to administrators, and numerous studies have been made, only a part of which are available for summary. These studies have dealt with three principal questions:

1. To what extent have graduates entered farming? Occupations closely related to farming? Unrelated occupations?

2. What has been the influence of vocational agriculture on the number of farm boys entering farming?

3. What are the chances that city and village boys taking vocational agriculture will enter farming occupations?

General occupational distribution.—The most comprehensive studies of occupational distribution have been those of the Federal Board for Vocational Education.²⁵ A summary of these studies has been reported by Lathrop, from which the following facts are drawn.²⁶

In 1922, 8,340 persons were studied who had one or more years in vocational agriculture between 1917 and 1922. This group was again studied in 1927 and in 1932. Thirty-seven states were represented. In 1927, 1,896 persons in 46 states were studied; these persons had received one or more years of training in vocational agriculture and had left school during the period

from 1922 to 1927. Their distribution was again studied in 1932. The 1932 group consisted of 6,279 persons, selected by taking the persons in every tenth school in each of the states who had left school during the period from 1927 to 1932.

The more important findings from these studies may be summarized as follows:

1. The percentages of these persons engaged in farming in 1932 increased in regular order from 40.9 per cent for the class of 1920 to 68.1 per cent for the class of 1931. In other words, the longer a group had been out of school, the smaller the percentage engaged in farming. A similar conclusion is reached on the basis of the following findings:

a. In 1922, 73.6 per cent of the 1917-22 group were engaged in farming. By 1927, only 60.5 per cent of them were farming. In 1932, the percentage in farming was further reduced to 59.9 per cent.

b. In 1927, 58.6 per cent of the 1922-27 group were engaged in farming. In 1932, 53.1 per cent of them were farmers.

2. There was a decided increase in the percentage of the boys becoming farm owners with the lengthening of the period since leaving school.

a. In 1922, only 11.3 per cent of the 1917-22 group engaged in farming were farm owners. In 1927, this percentage had increased to 30.3 per cent, and in 1932 to 43.8 per cent.

b. In 1927, only 7.3 per cent of the 1922-27 group engaged in farming were farm owners. In 1932, this percentage had increased to 16.8 per cent.

3. There was little change from 1922 to 1932 in the percentage of boys engaging in farming immediately after leaving school. In 1922, 59 per cent of the 1917-22 group were farming. In 1932, 63.8 per cent of the 1927-32 group were on farms.

4. There was a material falling off from 1922 to 1932 in the percentage attending college during the years immediately after leaving high school. In 1922, 9 per cent of the 1917-22 group were in agricultural colleges. In 1932, 4.1 per cent of the 1927-32 group were in such colleges. The percentages attending non-agricultural colleges likewise had dropped. In 1922, 15 per cent of the 1917-22 group were attending non-agricultural colleges. In 1932, only 6.7 per cent of the 1927-32 group were in such schools.

5. There was a material increase in the percentage engaged in non-agricultural occupations. In 1922, 11 per cent of the 1917-22 group were thus engaged. In 1932, 19.9 per cent of the 1927-32 group were in occupations not agricultural in nature.

Less comprehensive studies of the same type have been reported by Buckhardt, Davis, Eason, Heald, Lathrop, Lattig, Sasman, Smothers, Stimson, and others.

One of the earliest studies, by Heald, reports the occupational distribution of persons leaving the school at Hadley, Massachusetts, over a 14-year period.²⁷

71 negro students who had left the schools of Virginia after having studied vocational agriculture.²⁸ He found 40 per cent of them engaged in farming.

A study of 711 Indiana boys with one or more years of vocational agriculture was reported in 1923.²⁹ Sixty schools were represented. It was found that 76 per cent of these boys were engaged in farming.

Stimson reported in 1927 the current occupations of persons receiving instruction in vocational agriculture in Massachusetts from 1908 up to that time.³⁰ Seventy-four per cent of all such persons could be located, 2,157 out of 2,786. Only those were included who had received one year or more of instruction. They were distributed as follows:

Connected with agriculture 60 per cent
Farming full-time 40 per cent
Farming part-time 5 per cent
In agricultural education 1 per cent
In business allied to agriculture 4 per cent
Have agricultural sidelines 3 per cent
Went to agricultural college 7 per cent

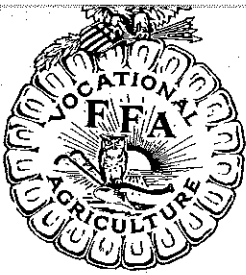
Not connected with agriculture 40 per cent

Stimson reported additionally that the first separate school, with 70 per cent found, had 74 per cent connected with agriculture. Of the three county agricultural schools; one, with 87 per cent found, had 63 per cent connected with agriculture; another, with 70 per cent found, had 59 per cent; and the third, with 44 per cent and 69 per cent found at its two centers, had respectively 43 per cent and 57 per cent connected with agriculture. One department, near a summer resort, had only 17 per cent of its graduates connected with agriculture.

Davis found the percentage of students with one or more years of vocational agriculture engaging in farming for District 11 in Ohio.³¹ He discovered that only 30 per cent had engaged in farming, compared with 59 per cent for the entire state. Fifteen per cent had

(Continued on page 80)

24. B. C. Lawson. Are we thinking straight in regard to objectives? *Agricultural Education*, 3:121, February, 1931.
25. Reported in Bulletin No. 82, *Agricultural Series No. 13, Effectiveness of Vocational Education in Agriculture*, first printed in 1923, revised in 1928 and in 1933. Federal Board for Vocational Education.
26. F. W. Lathrop. *Effectiveness of Vocational Education in Agriculture*. Bulletin 82, *Agricultural Series No. 13*, Federal Board for Vocational Education, 1933, vii + 19 pp.
27. Franklin E. Heald. A fourteen-year record. *Vocational Education Magazine*, 2:278-79, December, 1923.
28. Eason in 1922 studied 814 white and 28. Reported in Bulletin 82, *Agricultural Series No. 13, Federal Board for Vocational Education*, pp. 41-44, 1923.
29. What becomes of boys who have had vocational courses in agriculture? *Vocational Education Magazine*, 1:346-47, January, 1923. Also reported in *Educational Bulletin No. 61*, Indiana State Department of Public Instruction.
30. Special report for December, 1927, Vocational Division, Massachusetts Department of Education. See also article by R. W. Stimson, "The Occupational Status of Vocational Agriculture Graduates in Massachusetts," *Agricultural Education*, 1: No. 4:12, April, 1929.
31. Fred R. Davis. The relative value of vocational agriculture training to the average high school student who takes it and the value of experience in teaching vocational agriculture to the average high school teacher in securing advancement. Master's thesis, Ohio State University, 1928, 52 pp.



Future Farmers of America



Tennessee Future Farmers Called to Duty

ON PREVIOUS occasions when I have been on the air, I have spoken of our objectives and accomplishments as Future Farmers of America; today I speak to you Future Farmers of America in the State of Tennessee as your President, and am transmitting to you my first Executive Order as follows:

Executive Order No. 1

WHEREAS our National Government is now engaged in active warfare against the depression, and it is of utmost importance that the provisions of the Agricultural Adjustment Act and the National Industrial Recovery Act be carried out, in accordance with the instructions and wishes of President Roosevelt and those in authority, THEREFORE, I, Connard Sullivan, President of the Tennessee Association of the Future Farmers of America, by virtue of the authority in me vested, do hereby direct and urge that every Chapter of Future Farmers of America in the State of Tennessee, collectively, and each and every Future Farmer of America within the confines of this State and within my jurisdiction, immediately tender their services to the local committees in each county charged with the work incident to carrying out the wishes of President Roosevelt.

Future Farmers of America represent the flower of rural youth, and they have never fallen short of their mark. Today duty calls as it has never called before, and it is my most sincere hope that every member of the organization will respond to this order and render all service possible to be rendered in this great emergency.

I am directing that the President and Secretary of each Chapter take due cognizance of this Executive Order, convey the purpose thereof to their membership, and advise me promptly of what action has been taken.

Given under my hand and seal this Monday, August 21st, 1933.

Connard Sullivan
President, Tennessee Association of Future Farmers of America

A copy of this order will be mailed immediately to every president; Future Farmers, you are called to duty, will you meet the emergency of the day and may I depend upon you? Remember, by the tenets of our organization and by our creed we are pledged to support our country, and this call to duty means action on the part of every Future Farmer of America.

MEN and women who make some aspect of nature their hobby, find in such interests great enjoyment and a source of cultural improvement. Some find delight in studying bird life, others in insect life, still others in the study of trees or other plant life. Great men and women in all walks of life have become naturalists and have found greater significance and happiness in life, through their knowledge and interest in nature. Who is in a better position to become a naturalist and thereby add a richer interest to life, than the teachers of agriculture and the Future Farmers of America? Every aspect of nature comes under the observation and ken of the farmer. His walks across the fields, his trails along the streams, his wood lot and his garden,—all abound in the richest variety of nature interests to delight the heart and mind of a true naturalist. What a contribution to the education and life of the future farmer would our teachers of agriculture be making if they could make naturalists as well as future farmers out of their students.—The Fan Mill, Illinois.

Future Farmers and Farm Act

EVERY Future Farmer should enlist his services by making a study of the federal farm act passed by the last session of congress. This law is broad in scope, and it is bound to affect in a direct or indirect way every farmer in the United States.

There are three parts to the act:

(1) The farm act proper for controlling production and increasing farm prices, to be administered by the secretary of agriculture.

(2) The farm mortgage credit section, to be administered by the governor of the agricultural credit administration.

(3) The monetary control section, to be administered by the President.

Future Farmers should be particularly interested in increasing farm prices, through controlling the production of wheat, corn, cotton, rice, tobacco, hogs, and dairy products. Dr. C. H. Lane, national adviser, is anxious that F. F. A. members become acquainted with the agricultural commodity under consideration in their community, become familiar with the contract with the government and other factors that will help in carrying out the agricultural adjustment plan. Here is a chance for Future Farmers of America to assist in putting over a national agricultural recovery program.—Oregon Future Farmer.

Pennsylvania Future Farmers and Supervisors Meet

WILLIAM A. BROYLES

THE ANNUAL meeting of the Future Farmers in Pennsylvania was recently held at The Pennsylvania State College. From all quarters of the state came the teachers of agriculture with selected teams to compete in the annual contests. When the count was made, 530 boys had been entered in five different contests. The contestants were housed in the college dormitories and fed at the Sandwich Shop in Old Main where they enjoyed at low cost every comfort during the three busy days they remained at the College.

At the same time the Future Farmers were contesting for honors, the supervisors and teachers in agriculture were in sectional meetings for their annual conference. The program for the supervisors of agriculture had been planned on the conference basis. Seventeen supervisors in all appeared on the program, with ample time for discussion. The last forenoon was given over to a panel conference in which eight men were selected for the round table discussion of the topic presented by Dr. F. P. Weaver on "Social and Economic Changes and their Implications for Agricultural Education." Questions from the floor were given preference by W. H. Bristow, Deputy Superintendent of Public Instruction, chairman of the panel. At intervals the men around the table were called upon to ask questions or to make contributions to the discussion. The subject was a live one, and it was handled so well that interest was still keen at the end of 2½ hours. Prominent speakers on the panel were Professor J. L. E. McCord, Department of Agricultural Economics; Mr. A. P. Williams, Federal Agent for Agricultural Education; Mr. W. H. Bristow, Deputy Superintendent of Public Instruction; Dr. F. P. Weaver, Head of the Department of Agricultural Economics; Dr. James N. Rule, State Superintendent of Public Instruction; Dr. Lee L. Driver, Director of Rural Schools Division; and Dean R. L. Watts, School of Agriculture.

There are some discouraging things about the agricultural problems of today, but judging from the good-will and enthusiasm of the Future Farmers of America and their teachers at the annual conference at The Pennsylvania State College, both students and teachers are facing their problems with courage and the faith that their cause is worth while. Belief and faith in the worthiness of a cause is its strongest bulwark.

Alabama's F. F. A. State Convention

G. T. SARGENT, Assistant Supervisor of Agricultural Education

AN UNUSUAL educational feature of the recent annual Convention in Auburn was the plan and execution of the Experiment Station Tour. Heretofore, the boys had been conducted on a tour of the Station, showing them as many and varied experiments as time would permit. The plan this year differed in that only five plots were visited, and on each the method of experimenting was shown and explained.

The Station staff decided to get the boys to write their impressions of the Station after the tour. As a method of promoting interest, three prizes were offered: First, a registered Jersey bull calf; second, a registered boar pig, either Poland China or Duroc; and third, 300 black locust seedlings to each member of the chapter with the third winning essay. The prizes were not to be individual, but chapter property. All prizes were given by the Station.

Before beginning the tour, Director Funchess met the entire group, explained to them the magnitude of the experimental work in the state, including the main station at Auburn and the sub-stations and the experimental fields in use over the state. Following this, the experiments to be visited were explained by members of the staff, and later in the field detailed explanations were given. The group of 300 boys were divided into five groups, and the plots were visited alternately until each group had visited each of the five plots.

The agronomy plot dealt with cotton spacing, and details were shown as to the care used in hand planting, hand spacing, picking, weighing, and the amount of record-keeping necessary to know exactly what each spacing would produce under the same fertilizer and cultivation schedule.

The agricultural engineering plot dealt with erosion, and the specially built erosion experiment was visited. It was explained how the amounts of erosion were determined by use of bins to catch the eroded soil from different slopes. Rain gauges and the use of artificial rainfall apparatus were also explained.

In the animal industry field the boys were showed twelve barrels in which meat curing was being tested, using different amounts of salt, ice, and water. Each barrel contained the same amount and kind of meat, being filled each six weeks of the summer to show that meat can be cured in the summer by use of salt and ice.

The poultry department had an attractive display of 26 feeds sectioned off on a table. The result of each feed with forty hens was shown in the average number of eggs per month. One interesting feature of these feeds was that with corn and milk as a basis, just as good results may be had as with the most expensive commercial feed. Some interesting data on peanuts and beans as a supplement to poultry feed and the necessity of green feed were presented.

In the forestry division the boys were showed the effect of burning off woods.

The burned and unburned plots carried a real lesson to the Future Farmers, showing them just what part of the farm income was being destroyed each year where the practice of burning woods is in effect, and that the burning of woods really has no influence in the control of cotton boll weevil. Following this, the boys were shown a planting of Lobolly pine, growth six years. This impressed the boys, and many were heard to remark that they had never thought of planting pine sprouts on their waste land.

On this tour each boy had his note book and pencil. The essay was written after the boy had returned home, and the winner in the chapter was decided at a chapter meeting. Following this, the county winner was determined by a committee appointed by the local advisers. When the county winners were determined, their essays were sent in to the district supervisors, to be turned over to a state judging committee, appointed by Director Funchess and State Adviser Cammack. This committee studied the essays from each county and agreed on the state winners of first, second, and third place.

The Experiment Station tour this year had a new meaning to the boys in vocational agriculture. They have expressed themselves as interested in this phase of the work in agriculture in Alabama, and are looking forward to this plan being followed in future meetings of the Alabama Association of Future Farmers of America.

The winning essay follows:

MY IMPRESSION OF THE AUBURN EXPERIMENT STATION

I have often heard the Auburn Experiment Station mentioned. I have heard my teacher mention it; I have read experimental data from its bulletins; I have read about it in farm papers; but I will have to confess that up until my recent visit I knew nothing about it. I have always thought of this Station as just a place in our state, where a few "white collared farmers" get together and make outlines as to how we should farm—but I'm all wrong.

We F. F. A. boys had the pleasure of seeing this Station a few days ago. We not only saw it, but we saw the inside of it. We were carried to five different divisions of the Station where the actual "whys, hows, and wheres," were explained to us. The actual picture of what it takes to carry out an experiment was painted for us. During this picture painting, I began to see what it was all about. I had no idea it took so much time, energy, patience, and money to find out the best ration for a hen, or how to space cotton, or how to kill and cure meat. I had no idea the bulletin information was so accurate. When one of these experiments is published, you can depend on it—It's accurate and will do to follow.

Personally, I'm sold on our Experiment Station. I think every farmer in the state should pay this place a visit and see just what these "white collared farmers" are doing and trying to do for the farmers.—Raymond Prater, Weogufka Chapter, Weogufka, Alabama.

Co-Ordinating F. F. A. Program with Supervised Practice

C. P. VICKERY, Instructor in Agriculture, Mt. Pleasant, Texas

THE existence of a local F. F. A. Chapter is justified only when it has a definite program of work. The nature of the annual and monthly F. F. A. Program should be educational, social, and entertaining. The instructional part of this program should be based upon the supervised practice program. The agricultural objectives to be accomplished by the local F. F. A. Chapter should be the same as the major problems taught in the supervised practice program. The monthly program should consist of efforts of the chapter to accomplish objectives of the annual program. Each program should have some entertaining or social events along with the instructional part of the program, to help hold the interest of some of the members.

One plan of getting the supervised practice program and the local F. F. A. program co-ordinated is for the local adviser to meet with the officers and executive committee in a business meeting called by the president soon after the reorganization meeting, and advise with them in setting up the annual program. After the pupils have selected their projects and supervised practice program, other joint meetings should be held by the executive committee, officers, and adviser for the purpose of selecting appropriate members of each committee to sponsor each of the various objectives of the annual program. These committeemen should have projects and supervised practice jobs of the same nature as the objective they are to help sponsor. The chairman of the various objective committees may have opportunities at Father and Son Banquets, luncheon programs, etc., to comment on the success of any accomplished objectives or on the future plans of the committee for accomplishing an objective. The annual objectives should be arranged in seasonal order and reports called for by the president in seasonal sequence at the monthly meetings of the chapter.

When an objective has been accomplished, that objective committee should make their final report and be dismissed from their duties. Each F. F. A. member should be given a score on each objective of the F. F. A. Score Card on the basis of how he co-operated in getting the objective accomplished. This will motivate co-operation in getting the program accomplished.—Lone Star Farmer.

Reception to Incoming Members

THE Glassboro, New Jersey, F. F. A's. have a good plan for starting interest in the F. F. A. at the beginning of the school year. They stage a reception to all incoming freshmen in the vocational agriculture classes. At the last such meeting, 40 boys attended and made merry with Jersey watermelons and other such farm produce.

A man's popularity is genuine when it is due to the fact that he isn't aware of it.

(Continued from page 77)

entered college, compared with 6.7 per cent in the state as a whole.

Lattig has studied the occupational distribution of 820 boys enrolled in Idaho classes in vocational agriculture in 1922-23 and 519 boys enrolled in such classes in 1927-28.³² He found the 1922-23 group distributed on April 1, 1928 as follows:

Farming	43.5 per cent
College of agriculture	4.9 per cent
Occupations related to agriculture	2.7 per cent
Colleges other than college of agriculture	10.4 per cent
Occupations unrelated to farming	32.7 per cent
Dead or unknown	5.8 per cent

The 1927-28 group were distributed in February, 1929, as follows:

Farming	49.7 per cent
Occupations closely related to farming	1.9 per cent
In college of agriculture	4.8 per cent
In other colleges	9.4 per cent
Day labor	10.0 per cent
Other occupations	15.4 per cent
Information not secured	7.4 per cent
Deceased	1.3 per cent

Buckhardt determined the occupational distribution of 1,540 persons who had studied vocational agriculture in 76 Illinois communities during the ten years immediately following the passage of the Smith-Hughes Act.³³ He found the following distribution:

Now farming	50.9 per cent
In non-agricultural occupations	17.8 per cent
Went to non-agricultural colleges	16.4 per cent
Went to agricultural colleges	8.0 per cent
In occupations related to farming	6.9 per cent

He found that of those engaged in farming, 46.3 per cent were partners; 12.6 per cent were renters; 8.3 per cent were managers; and 5.7 per cent were owners. The remaining 27.1 per cent were farm laborers.

Smothers has reported the occupational distribution of 112 graduates of the Newton, Iowa, high school who had completed courses in vocational agriculture, in comparison with the occupational distribution of 891 other graduates of the same high school during the same period, 1920 to 1929.³⁴ He found 48.2 per cent of the vocational agriculture graduates in agricultural occupations.

Lathrop has provided the data by states for the North Atlantic Region regarding the distribution the following year of boys leaving school at the end of the year 1929-30.³⁵ In the region as a whole, he found 57.1 per cent of these persons engaged in agricultural occupations. Fifty-one per cent were on farms. The percentage in farming varied by states from 21.2 per cent to 66.6 per cent.

Sasman, reporting regarding all Wisconsin departments except two, indi-

cated that of 1,092 persons who graduated from or dropped courses in vocational agriculture during 1930-31 there were 74.2 per cent engaged in agricultural work the following year.³⁶

In general, it can be said on the basis of the studies available that, in spite of the fact that federal funds for vocational education in agriculture are intended to be spent only on persons engaged in farming or intending to farm and in spite of continued efforts to select persons for high school classes in vocational agriculture who are likely to engage in farming, we can still expect that one-third to one-half of the members of any given high school class thus selected will spend their lives in occupations not directly related to agriculture.

32. Typewritten reports from the author. A report of the earlier study is available in *Agricultural Education*, 1: No. 4:14, "Utah Studies Graduates' Records."

33. H. L. Buckhardt. Effectiveness of a decade of vocational agriculture in Illinois. Master's thesis, University of Illinois, 1929. 70 pp. Mimeographed summary available from Department of Agricultural Education, University of Illinois.

34. Homer I. Smothers. A comparison of the occupational careers of the graduates of the vocational and non-vocational courses of the Newton, Iowa high school. Master's thesis, Iowa State College, 1931. 62 pp. Summarized in article in *School Review*, 40:302-06. April, 1932.

35. F. W. Lathrop. Some research problems. pp. 123-25. Report of fifteenth annual North Atlantic Region conference. Federal Board for Vocational Education, 1932.

36. 1932 report, Wisconsin State Supervisor of Agricultural Education.

(To be continued in December)

Books

Work-Units in Animal Husbandry, by B. A. Walpole and Forrest A. Smith; *Work-Units in Horticulture*, by Leo R. Stanley, Arthur L. Knoblauch, and Lee N. Rosencrans; *Work-Units in Farm Crops and Soils*, by B. A. Walpole. These three Work-Unit outlines are published by the J. B. Lippincott Company, bound in heavy paper covers, punched to fit the student notebook and to facilitate filing. They are printed on good quality paper, clear easily read type, illustrated, and contain 184, 224, and 261 pages respectively.

The plan of organization breaks the field of study into major units. The units in turn are broken into problems. The mastery of the problems is essential to an understanding of the unit. The general formula for procedure seems to be, pre-test, teach, test the result, adapt procedure. A series of skills are listed under each problem and are to assist in developing an understanding of the problem through various activities with fact rather than through descriptive information of facts. Supplementary skills are listed to assist the pupil in mastery in case the skills included under the problem did not accomplish this end. An adequate reference list follows each unit. The division of subject matter into major units, the problems set up under the units, and the skills and supplementary skills listed show a thorough knowledge of the subject matter treated.—A. P. D.

Vocational Class Assist with Farmers' Institute

NELSON W. HUNT, Instructor in Vocational Agriculture, Whitewater, Indiana

IT HAS been a problem to interest vocational pupils in exhibits to the extent that they would take part in the local farmers' institute. To stimulate this interest among the boys in the animal husbandry and farm shop classes the following was attempted.

The 30 boys in the animal husbandry class and in the farm shop class were divided into 5 groups of 6 boys each, with each group containing as near the same ability as possible. The boys from the animal husbandry class were given their choice of making either dairy, beef or swine exhibits. The farm shop boys exhibited their work which included farm equipment constructed in the shop.

The exhibits were judged and graded by a neighboring vocational instructor. The group of six boys from the animal husbandry class and the six boys receiving the highest scores in the farm shop exhibits were treated to a banquet by the instructor.

Before the exhibits were entered, it was suggested that each boy should make at least one entry in one of the following classes: corn, wheat, oats, clover seed, potatoes, or eggs.

Not only did 100 per cent of the boys exhibit in the animal husbandry and farm shop classes, but they also exhibited one or more times in the other classes mentioned. The local farmers' institute succeeded as never before, and vocational agriculture has strengthened its support by co-operating to bring about this success.

I often wonder what it is that brings one man success in life, and what it is that brings mediocrity or failure to his brother. The difference can't be in mental capacity; there is not the difference in our mentalities indicated by the difference in performance. In short, I have reached the conclusion that some men succeed because they cheerfully pay the price of success and others, tho they may claim ambition and a desire to succeed, are unwilling to pay that price.—Herbert F. De Bower.

Nolan Screenings

THAT THE pasture is greener on the other side of the fence, is often an optical illusion. That one community, in which to teach vocational agriculture, is so much better than another, is also often a mental illusion. These rural communities are all composed of farms, American farmers, and future farmers. True, the natural and economic resources may not be so promising in one community as in another, but the human element in any of our typical farming communities does not vary a great deal, and it is the human element that is more determinative of the progress and satisfactions of community life than is the geographical location. If a teacher of vocational agriculture can not get along well with people and find his opportunity for service in one community, it is doubtful whether he can in another.—Illinois Fan-Mill.