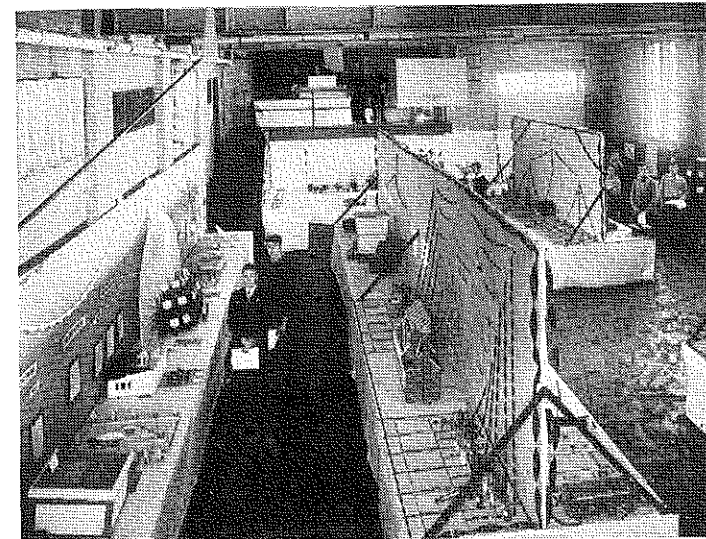


VOL. 10

APRIL, 1938

NO. 10

THE AGRICULTURAL EDUCATION MAGAZINE



A Few of the 117 Exhibits Displayed During Thirteenth Annual Science Exposition, Hathorne, Massachusetts. (See Page 184).

Education is the process by which each individual re-creates his universe and determines its dimensions.—Calvin Coolidge.

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

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Some Competitive Aspects of Vocational Agriculture

MUCH has been said about the co-operative relationship of vocational agriculture to other agencies. All of this has had emphasis well placed, and efforts in this direction should be continued and strengthened.

While recognizing the co-operative relationship let us not lose sight of the competitive relationships. This competition finds expression in educational services being rendered by other agencies and in the inducements offered by other agencies to the personnel that has been trained for vocational agriculture. Some of these agencies are of long standing. Others are of recent origin, many of which are products of the New Deal.

In this country, society has delegated to the public school the responsibility for education. This point of view does not deny that education is the sum total of all human experience and hence much of education is acquired outside of school. The fact remains, however, that as an institution the school is charged with the responsibility for education.

In vocational agriculture one of the most serious problems growing out of the competitive relationship to other agencies is that of salaries of teachers of vocational agriculture. Being integrated in the public school system there is pressure to keep salaries of agriculture teachers on a level with academic teachers. If the nature of the work of vocational teachers and the necessary expenses attached thereto are understood there is some justification in this point of view. It must be remembered, however, that other agriculture agencies are bidding for our best teachers, and if we can not meet this competition it will inevitably follow that the public schools will be left with teachers of inferior qualifications.

In this competitive relationship it behooves us to maintain the most cordial relationship to other agencies. No advantage will be gained by fighting *against* the other fellow, but rather in fighting for ourselves. This will result finally in *service well performed* and for which society will offer *adequate remuneration*. We should remember that we are in competition along both these lines.—V. G. Martin, *Agricultural Education, Mississippi*.

The Need for Educational Change

THE RURAL life of today is much less "rural" than it was several years ago. The agencies that tend to break down the lines of distinction between rural and urban people are the rural free mail delivery, the movie, radio, telephone, automobile, good roads, and other recent developments. The appearance, speech, interests and tastes, leisure pursuits, knowledge and attitudes are much more homogeneous. This elevation of standards for rural people adds to the task of their education.

With the development of efficiency in farm production, the problems of farm people have shifted from production to marketing. The nature of education for successful farming has therefore changed from concentration upon animal husbandry and crops to include training in economics and political science, and particularly in current events and developments.

If youth is to profit to the greatest degree from his education, then our educational program must be adjusted not only to the purposes and ideals but to the non-static conditions of American society as well. The school is not only a social institution but is supplementary to other social institutions in nature and function. It is true the responsibility for various educational services is shared by other agencies. The school to be of maximum benefit must be flexible and must make whatever adjustments the educational interests and the changes in society and social institutions demand.

Social conditions are constantly undergoing changes, many of which not only result in diminishing the educational contributions of institutions other than the schools, but also in changing and increasing the nature of the demands upon education. It should then be clear that not only is the school to be regarded as an institution for social purposes and interests, but that it is supplementary in character and must

constantly adjust itself to changes in other institutions and to conditions of society. It may be fair to say then, that teachers and administrators have not kept themselves informed as to the growth or decline of the educational services of other institutions, therefore, the necessity for educators and teacher-training institutions to become conscious of this situation.

No formal school education acquired in childhood and youth, however valuable, is adequate training for the needs of life. This truth should assist us in recognizing the futility of our illogical and fallacious educational theories and practices which center around the "storage" or "all or none" concept of schooling.

The life of our people has undergone, in the last two or three generations, so thoro a transformation while the educational program has lagged increasingly behind these changes. It seems that our educational program needs to be re-evaluated.

The American people support schools to give their children a chance. (This is my clear-cut philosophy of education.) When a youth is no longer willing to apply himself to one type of curriculum, it should be possible for him to find his place in one of a different nature more suited to his temperament. In the United States we hope to give each individual a chance to develop his potentialities, to show what he can do, and the instrument for achieving this ideal is our system of schools. Thus, the function of the teacher is not merely to impart knowledge or skill. He must serve as an adviser or a guide.

It seems to me then, that the big role of education, and one which is most important, is supplying experiences on the bases of which a valid sense of values can be built up. It should not be forgotten that it is equally important that the school help the individual pupil to digest and organize out-of-school experiences into wholesome desires and attitudes. Neither of these services can be rendered to growing personalities while the school remains essentially static in its educational environment or opportunity.—John C. Floyd, *School of Vocational Education, Louisiana*.

WHITHER AGRICULTURAL EDUCATION?

Teachers of agriculture will be interested in our new booklet containing 63 pages. The articles contained in it were published in the magazine. They have been brought together in the booklet form for your convenience. The authors, our own fellow-workers, have made a distinct contribution to our field of education. The articles cover the following topics:

- Relating Instruction to Life Needs
- Building Attitudes
- Building Agricultural Citizenship
- Course of Study
- Supervised Farm Practice
- Extra-Curriculum Activities
- Balanced Education
- Co-operating With Farmers' Organizations
- Measuring and Evaluating Pupil Growth
- Teacher Education
- The Art of Living

The number of copies of this booklet has been limited to 3,000. Teachers of agriculture are urged to write at once to their state supervisor or teacher-trainer for copies. We are able to distribute them to the states in lots of 20 or more at a cheaper price than when single copies are ordered. In case teachers of agriculture can not secure their copies from their state supervisor or teacher-trainer, they may be procured from either the Editor or Business Manager at 15 cents per copy post-paid. If any state association of teachers of agriculture desires to purchase in lots of 20 or more, a reduced price will be quoted upon request.

Order Today, so that you may get your copy as there are over 5,000 teachers of agriculture and no re-printing will be made.

Science as the Handmaid of Agriculture

JAMES F. GALLANT, Science Instructor,
Hathorne, Massachusetts

THE 13th Annual Science Exposition was held during the month of November at the Essex County Agricultural School in Hathorne, Massachusetts. This event, sponsored by the Essex Chapter of F. F. A., was managed by the Science Committee, one of the 14 active working committees of this chapter.

A preliminary exhibition for new students was held in the school assembly hall November 1 and 2. The main exhibition consisting of exhibits prepared by advanced students was on display in the gymnasium and assembly hall from November 13 to 17. One hundred and seventeen exhibits (total in combined exhibitions) were judged by members of the school faculty, who used a judging manual especially developed for this task. Over 180 F. F. A. members voluntarily participated in one or more of the seven identification contests which could be entered on school days from November 8 to 12. These contests featured weeds; trees; vegetable pests; fruit pests; ornamental pests; grasses, legumes, and feed ingredients; and poultry items. (The boys had prepared for these contests during the supervised practice period from May 1 to October 1.)

In order to direct attention to the yearly program of the Essex Chapter F. F. A. Science Committee (see program of the year 1937-38) the members set up in an attractive booth a display featuring: committee work, exposition awards, and judging machinery. Invitations to the featured exhibition were sent to parents and friends of the school. An estimated 500 visitors received souvenir programs of the exposition.

The Science Assembly Program held on November 17 climaxed the Exposition. Musical numbers by the school F. F. A. orchestra, an illustrated talk on "Natural Beauty Spots in Massachusetts," and the distribution of awards were the features of this program. The prizes awarded were as follows: a beautiful silver plaque; four science books; two gold, two silver, and two bronze medals; 28 blue, 26 red, and 25 white ribbons.

F. F. A. members at the Essex County Agricultural School sense the underlying value of science, especially in so far as it is related to those agricultural practices in which they are interested. They anticipate each yearly Science Exposition with great eagerness and carry on programs of summer science with enthusiasm and efficiency. Exhibits such

as Essex Chapter F. F. A. members prepare, require months of intensive work under the constant supervision of their science instructors.

The following analysis of the exhibit, which can be seen along the left wall in the photograph, brings out the scope and research involved in the summer science project of one F. F. A. member.

SCIENTIFIC ASPECTS OF POULTRY REPRODUCTION

General Description

This exhibit is designed to show the development of the chick and the influence of environmental factors from the time of reproductive cell formation thru fertilization and incubation. This display is set up in seven distinct units, each stressing some particular phase of the subject. Those are as follows: The reproductive organs, formation of the egg, breeder management, the embryology of the chick, selection and care of eggs, genetic explanation, and incubation factors.

Color scheme: Blue and white.
Signs: All signs in black letter ink with a 3/8" margin, except "The Chick" in the center sign which is painted with red on white cardboard.

Center sign: 12"x28", letters 1 1/8"
Six main signs: 3 1/2"x22 1/2", letters 1 1/2"
Nine sub-signs: 2 1/2"x10", letters 1 1/2"
Two sub-signs: 2 1/2"x8", letters 1 1/2"
Card blocks: 2"x1 1/2"x1 1/2"
Written descriptions: Typewritten articles clipped on 11"x14" gray cardboard.

White ribbon connects all signs and write-ups in each unit.

Specific Description

Unit One

- Signs: a. The reproductive organs; b. Male; c. Female
- Written description: Anatomy and physiology of male and female reproductive organs.
- Drawings: Of anatomy and physiology of male and female reproductive organs.
- Uniform bottles with blue covers to preserve specimens of male and female reproductive organs.
- Insulated freezing box with double glass doors (dry ice used which lasts 48 hours and costs about 5c a pound) for preserving specimen in natural color of both female and male organs.

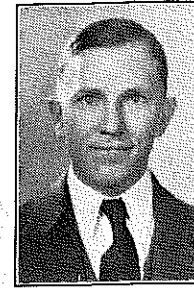
Unit Two

- Signs: a. Development of the egg
- Written Description: The anatomy and physiology of the reproductive system and its component parts.
- Plaque: Flat model of the female reproductive organs
 - Base 22"x28"x1 1/2" plywood.
 - Side strip 1"x1 1/8"
 - Brass corners.
 - Model constructed with clay.

(Continued on page 198)

Procedures in Practice Teaching*

CARSIE HAMMONDS, Teacher Training,
Lexington, Kentucky



Carsie Hammonds

THIS is not a report on procedures followed in directed or practice teaching in vocational agriculture. It is not a discussion of plans in use. Rather, it is a modest attempt to provoke discussion which may bring into the open some of the principles that should govern procedures in practice teaching.

Presumably, we have practice teaching in order that we may promote desirable learning on the part of the trainees. With the statement in such terms we accept it, as always. But what is the desirable learning?—To what extent?—Specifically, how to promote it?—and the lid is off. There are those who feel that we should not develop sufficient skill in teaching to insure immediate success, but that we should give such an appreciation of the principles of correct practice that the graduate will be able to acquire good procedures after he goes on the job. There are those, on the other hand, who believe that we should develop in the trainee a degree of skill that will make him competent from the first. With such divergence of opinion, agreement on procedures in practice teaching is not possible. So let us return to some general statements of the implications involved in promoting the desirable learning thru directed or practice or student teaching. Two of these implications are:

1. The necessity for a clear vision, by the teacher-trainer, of his design. I tried this statement on the dog. He thought that design meant a kind of an underhanded secret, a plot to injure. Then I looked up the word and found: "design, a plan of something to be done or produced; a purposeful plan as revealed or inferred from the relation of means to the end or parts to the whole; in art, a preliminary sketch." To have a design implies a mind, a high order of intelligence; one must know what he is about, the probable consequences of what he does. Strictly speaking, there is no directing anything in the absence of a design. To direct learning, one must have objectives. The teacher (teacher-trainer or any other teacher) must have an object. Teacher-trainer objectives, no less than objectives of other teachers, must be clear, justifiable, attainable. Method is meaningless except as governed by forecast of a result desired. One never truly directs learning who does not see the relation of the process of learning to the object he seeks.

No attempt is made here to list the objectives to be attained by a teacher-training department. These the department must have, and before deciding which objectives necessitate practice teaching for their attainment. Perhaps in a world of reality, we cannot think of objectives separate and apart from the method of attaining them.

2. The necessity of understanding how practice operates in learning to teach vo-

which abilities are needed. 2. The trainee-learner should be aware of what he is after. In a very true sense, he cannot be after anything of which he is not aware nor which he does not want. In the role of teacher he should know the product he seeks, both in the agriculture-learner and himself. Knowing the latter usually necessitates a good pattern or demonstration of the ability he is to acquire.

3. In developing teaching abilities, we believe, careful planning of the teaching by the trainee and checking by the trainer is essential to the most rapid progress. Such a procedure makes for practice of the correct rather than the incorrect. It also increases the amount of covert practice and helps the learner see where he would not otherwise have seen.

4. Since generalized abilities or procedures, as contrasted with formalized or unvarying inflexible procedures, are usually needed in teaching, much practice in varying situations is necessary in order for the trainee to acquire the desired abilities.

5. For the trainee-learner to acquire a generalized ability, he must come to see and feel and do where he did not see and feel and do before; just as in generalizing on squareness one comes to see the corners and equal-sidedness which he did not see before, and he isn't expected to see by himself. This necessitates direction, hence directed teaching.

6. Apparently, where the abilities to be acquired are complex, after the initial pattern and after the trainee has tried his hand a few times, he usually profits tremendously by another good pattern.

7. After each practice trial the learner should know, discover himself in so far as possible, wherein he succeeded and wherein he failed. The learner must become a critic of his own efforts. Again, the necessity for direction.

8. The things we would have contribute to an ability to do should in some way be experienced by the trainee with the doing in learning. "Knowledge" which is to govern practice should in teaching be bound with practice. The teacher-trainer must see that the understanding and the practice are united. Practice and idea must come together.

9. In the words of Kilpatrick, "People learn what they accept to act on; it will stay learned as long as they continue to accept it and no longer."

There are many dualisms in education. The one we should like to touch on is the separation of theory and practice, of knowledge and its application. This dualism is widespread. As examples: In spite of all that has been written and said, specific objectives have influenced classroom teaching very little. Most of our "problem-solving procedures" are in books and do not affect to a great extent the teaching practice thruout the country.

Why does such dualism exist? Simply because an idea does not give one ability in performance. It has no inherent power to produce acts in accord with itself. Ideas that are to govern practice must in some way be bound with practice. The idea must be associated with the act. The wise teacher knows that ideas which are to govern practice must in teaching be bound with practice. Certain abilities must be developed thru practice teaching. We are free from

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(Continued on page 198)

ANNUAL PROGRAM OF WORK, 1937-38—SCIENCE EXPOSITION COMMITTEE

MONTH	ITEMS	GOAL
October	Fall Number of Essex Student Scientist	To stimulate interest in science and science exposition
October November December January February March April	Bulletin board	To bring new discoveries and interesting science information to the attention of the students. To stimulate interest in science.
November	Assembly talk (Anticipating our science exposition. Display of prizes)	Stimulate and maintain interest in the science program
November	Science Exposition Featuring: 1. New student exhibition 2. Identification contests 3. Main exhibition 4. Assembly program	<ol style="list-style-type: none"> To arouse curiosity and to stimulate and intensify interest in the scientific phases of practical agricultural activities. To develop appreciation in the natural phenomena of our environment thru useful science. To enable exhibitors, thru the actual handling of real things, to give expression to their very active desire to do things. To develop a scientific attitude thru the systematic organization and classification of exhibit material. To foster self-expression in the development and presentation of exhibits.
December	Winter issue of Essex Student Scientist	To stimulate interest in science and the science exposition.
March	Four assembly speakers, Summer Science Pop Campaign	To arouse interest in summer science.
March	Spring issue of Essex Student Science	To stimulate interest in science and the science exposition.
July	Summer Science Tour	To maintain interest in summer science.
September	Pep talk to entering students	To explain about the science exposition and to arouse interest.

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Visual Aids for Teachers of Vocational Agriculture

DR. E. L. AUSTIN, Department of Education,
East Lansing, Michigan

THE recent increased emphasis upon visual aids is only a new emphasis on an old problem. All teaching problems may be classified, for our purpose, under one or the other of two heads, viz., what to teach or how to teach it. This discussion presupposes that each teacher of vocational agriculture has worked out, written down, and makes constant reference to a specific set of objectives for each and every course which he teaches. Good procedure demands that these course objectives be set up in terms of the needs of the students who take the courses and upon a level of difficulty in keeping with the ability, experience, and economic and social conditions under which each student lives.

The question then arises: what are the most effective instruments available to transmit to the student in the most effective way, the information, attitudes, skills, and other elements set up in the objectives? Obviously, no one method or set of materials will fit all needs. The selection and use of the proper methods, materials, and teaching devices constitute one of the most serious problems of the teachers of agriculture.

One serious educational weakness of today, in the minds of a growing number of educators, is a terrible tendency toward verbalism. The vagaries of the English language are so numerous and the academic laziness of many teachers is so dominant that teaching has fallen into the seriously bad habit, in many cases, of rushing on to new words and forms of oral expression long before the old ones were understood, even in part. The student in the physiology class who stated that the body secured its lime from lima beans and the prospective Bible student who defined "epistle" as a gangster's weapon were mild victims of verbalism. Lip-service to problems which are not understood and the memoritor type of reciting long lists of this and that, which were so characteristic of the pioneer type of American schools, should have passed out with the ox-cart. Unfortunately we still have much of this word prattle with us. Any device which gives concreteness to meaning with clarity and continuity of understanding has a place in our teaching materials and techniques.

The use of visual aids must be justified in terms of their effectiveness in producing educational results just the same as any other form of teaching aids. The most important and perhaps the most difficult problem of visual aids is the effective adaptation of their use to the course objectives and materials of the particular courses in which they are to be used. Visual aids are a means to an end and not an end in themselves. The good surgeon thinks first in terms

of the health of his patient and selects his instruments and procedures in terms of the patients' needs rather than in terms of the opportunity to try out some new tool or procedure. He may have many different instruments for the wide variety of problems he is forced to meet. His success or failure depends to a great degree upon what instruments and procedures he selects to use in specific cases. So it is with the teacher of agriculture. The teacher cannot depend upon the exclusive use of one or two teaching aids any more than the surgeon can depend exclusively on one or two surgical instruments. Visual aids are powerful and effective instruments when properly used. They are sound educationally, if used properly. Extensive research by skilled educational leaders has proved the effectiveness of certain kinds of visual aids. This fact is well demonstrated by recent exhaustive research in the use of moving pictures.¹ The recent perfection of moving picture production and use, as well as the renewed interest in all forms of photography has focused attention upon these devices to an unusual degree. The teacher of agriculture is particularly fortunate in this respect because so much of the material to be taught in his classes is readily adaptable to visual aids in several forms.

Teaching consists largely of providing experiences to students. In agriculture many of the experiences and many of the materials to be used are present or near by so that reality is easy to attain in dealing with many problems of agriculture. One very important teaching principle must be emphasized continuously, viz., that high-school students are immature in physical and mental development and have had only limited experience because they have lived only a short time. Actual reality from the viewpoint of the student rather than from the standpoint of the teacher or other adult is paramount.

The commonest types of visual aids for the teacher of agriculture are the field trip, the real object or a model of it, the moving picture, the still picture, charts, graphs, and exhibits.

The Field Trip

Vocational agriculture from its very beginning has strongly urged reality. When we study animal husbandry, we urge the use of real animals and real problems of livestock feeding and management. Supervised farm practice is valuable educationally because it deals so largely in realities. Since no one farm supplies the variety of problems needed in a thoro study of all agriculture, it becomes necessary to visit other farms in other communities or states or even nations. Because the field trip has had

so much detailed emphasis heretofore and because of strict limitation of time, we will leave it with the one statement that it is a powerful visual aid when well used and deserves thoro attention if it is to reach its possibilities educationally.

The Object or Model

The use of an object, in its natural setting, is a form of visual aid which has received great emphasis from the inception of vocational agriculture. Livestock, machinery, grain, fruit, shop products, orchards, and many other objects in their natural setting have served well as teaching materials. Students see them in detail, they handle them, they work with them daily. Of all forms of visual aids they are the most real and perhaps the most useful. Unfortunately there are many objects and materials of allied importance which do not exist on all farms or even in all communities. For example, some knowledge of a packing plant is important to a student of animal production. Many farm boys have never seen a modern packing plant because there is none available. Some other form of visual aid such as a motion picture must be substituted for the real object. A cotton plantation, a cattle ranch, an ocean or a lake freighter or any one of a great number of realities which have direct bearings upon farming must be brought to the student of agriculture by some visual means, if he is to secure reliable and permanent understandings of them.

In the absence of the real object, a model may be used in many cases. Among my materials are nine potatoes, each one representing a common variety in Minnesota. They are true to type in shape, size, color, depth of eyes, and other physical features. They are made of some indestructible material by potato experts. For instructional purposes they are quite equal and in some respects superior to real potatoes. One teacher has a model miniature septic tank which shows more accurately and completely in 10 minutes how a septic tank works than could be done in many pages of printed materials or any amount of oral description. Still another teacher has a model barn in miniature showing rafter and framing construction. Numerous illustrations of excellent models are coming into use rapidly.

Charts and Graphs

Charts and graphs have been used by teachers for so many years that their use is often taken for granted. A brief analysis will show a surprisingly large number of teaching problems involved in their use, if they are to serve their best purpose educationally. At best, charts and graphs are only an interpretation of reality as seen by the authors and designers of them. Being symbolic, the degree of abstractness determines their worth as visual aids to the learner. Along with maps, posters, diagrams and cartoons, charts and graphs depend upon color, shape, and form to convey ideas. Relative values depend in large part upon interpretations which are al-

by the teacher. Simplicity, singularity of ideas presented, and relevancy are problems of serious concern for those who use these pictorial aids.

Only very recently has any emphasis in teacher-training been placed on the selection, construction, and use of visual aids in any form except in the early elementary teacher-training curricula.

The Moving Picture

Perhaps the most popular form of visual aids at the present time is the motion picture. The power of the motion picture is indicated in many ways. Dictators maintain a very strict censorship on motion pictures. Parents' associations are vigorously sponsoring censorship of public school and commercial films. The millions of dollars paid annually by the public shows the unusual appeal in entertainment and instruction.

Recent research studies show definitely that: first, the motion picture is a powerful medium of education; second, children, even at an early age, learn a surprisingly large number of facts from motion pictures and remember them for a surprisingly long time; third, motion pictures produce a measurable change in attitudes; fourth, they stir emotions; fifth, they provide patterns of conduct in day dreaming phantasy and action.²

The motion picture derives its power from at least three definite sources.³ It portrays continuity, action, and to some extent, time relationships. How can one describe a process or a sequence of action so well as by a motion picture? In the judging of horses, for example, action from directly in front or from the rear of the animal can be shown excellently in motion pictures. The movement of blood thru the blood vessels can be shown almost ideally by means of the motion picture and the microscope commonly known as microphotography. Numerous views of growing plants taken over several days or weeks and reconstructed thru time-lapse technique show growth even more effectively than by careful observation of the real plant. A moving arrow over a diagram or other form of animation focuses attention on the details of a process in excellent fashion. Slow motion, so commonly used by athletic coaches, shows many forms of action not observable to the unaided eye. Volcanoes and rivers can be reproduced in miniature with wholly natural effect. The camera is much more rapid in its reception than the eye.

A second source of film power is the physical conditions under which moving pictures are shown. The darkness of the room forces attention to the one visible thing—the picture. Other people and objects in the room are forgotten in part, because they are invisible.

A third source of film power is dramatization. Reconstructed scenes of history, literature, agriculture, and many other subjects take on life, action, and continuity. Hoban, Hoban & Zisman list the values⁴ of films under eight heads. They are (a) initial learning of concrete factual material (b) developing thought and reasoning (c) learning relationships (d) permanence of learning (e) developing habits and skills (f) developing descriptive and explanatory responses (g) developing imagination and (h) developing interest. A lack of space prevents

are interested will find that a great deal of study and testing have been given to ascertaining the values of motion pictures.

Let us direct our attention for a few moments to some of the practical problems involved in the use of the motion picture. It is assumed that we adhere to the following principles: (1) All visual aids are only means to an end, not an end in themselves. The desired end is improved teaching and learning. (2) Each form of visual aids has its limitations as well as its particular sphere of usefulness. What are some things which films do well? (a) They may show the process performed in some desirable act. The drenching of a sheep, the construction of a piece of machinery, or scores of other processes may be shown clearly and effectively. (b) A film may demonstrate the details of a manipulative skill. Cameras may be placed at positions not ordinarily observable. Slow motion effect, easily obtained with an ordinary camera, emphasizes actions and positions useful in teaching skill. (c) Dramatic films such as "The Plow That Broke the Plains" combine action and emotion in an attempt to teach attitudes and appreciations. (d) There are numerous films produced by industrial concerns which have excellent educational value but which are objectionable to many school people because of the advertising or propaganda which they carry. This issue is highly controversial and probably should be decided in each case upon the conditions which prevail. It must be kept in mind constantly that motion pictures or any other visual aids contain no magic in themselves. Preparation for showing the film, that is, setting the educational stage, presentation under the proper conditions both physical and educational and finally, appraisal and follow-up are quite as necessary in teaching with the aid of motion pictures as they are with other teaching procedures. The age level of the student, the material, a review after presentation, oral discussion either as sound-on-film or otherwise, all are important for good results.

The Still Picture

The still picture in its various forms presents several definite advantages. Immobility is the strength of such a picture as the Washington Monument. Detail study of complicated scenes is impossible unless time is given for concentration and study. Most still pictures exhibit only two dimensions. The stereograph, so common on the parlor tables a few decades ago, is a valuable visual aid when well used because it shows objects in three dimensions. The photographic slide where the photograph is made directly on glass and the more recent two-inch slide for the new process color film are so common as to call for little description in their usage. The film strip usually consisting of a series of 30 to 50 pictures and titles on one strip of positive film is a favorite form of still picture with many teachers of agriculture. Its compactness, low cost, and ease of operation contribute much to its popularity. The mounted picture and the blueprint are used by many teachers for individualized instruction or instruction in small groups.

A relatively new feature in pictures both moving and still is the natural color

films as Kodachrome and Dufay. By mounting the transparencies, consisting of small pieces of processed film, between cover glasses and projecting them on the screen, excellent pictures in natural color are obtained. Researches in the use of color film in comparison with black and white films are too limited at this time to show conclusively any special advantages to either.

Some Practical Problems

The teacher of agriculture who undertakes to use visual aids in their various forms is immediately faced with a considerable number of serious, practical problems.

What forms of visual aids most nearly meet the needs in my teaching?

How shall I secure the equipment and materials?

How much will they cost, and how shall the money be secured?

Can I make my own pictures, charts, graphs, and other aids?

What kinds of projectors and screens are best?

Where can I secure films?

Should I use materials furnished free by commercial companies?

These and many other questions are involved in a program of teaching which calls for a larger use of visual aids.

Moving picture projectors and films are quite expensive. Unfortunately school officials in many cases have not yet come to think of them as a part of standard school equipment. Because schools have been conducted heretofore without them, many school officials are unfamiliar with their value and hence are slow to accept the added expense.

Fortunately, manufacturers of projection apparatus for both moving and still pictures are becoming vitally interested in the educational use of pictures. Schools in ever increasing numbers are demonstrating the value of these teaching aids. New materials are being produced in many new fields at a very rapid rate.

The 16 mm film, with or without sound on the films, is generally recognized as the most desirable size, and most new films are being produced as 16 mm.

Teacher-training both pre-service and in-service is rapidly providing opportunity in this field.

There is abundant evidence to indicate that the progressive teacher of agriculture will make a much larger use of visual aids in the very near future and that his effectiveness will be greatly enhanced by it.

1 Devereux, Frederick L. *The Educational Talking Picture*, University of Chicago Press, 1933.
2 Hoban, Hoban & Zisman—*Visualizing the Curriculum*, The Cordon Co., N. Y., 1937, p. 94.
3 *Ibid.* p. 95.
4 *Ibid.* p. 113.

Book Review

"Range Plant Handbook" prepared by the Forest Service of the U. S. D. A. is available from the Supt. of Documents; Washington, D. C., 512 pages. Price \$2.50—1937. This should be of especial use to agriculture teachers in the Western grazing areas for reference purposes. It is profusely illustrated with sketches, photographs, and colored plates. Each plant is carefully described, for its distribution, forage value, and palatability.—W. P. Beard.

Supervised Practice

H. H. GIBSON

Raising Standards of Supervised Farm Practice

S. C. HULSLANDER, Teacher,
Tunkhannock, Pennsylvania

"LEARNING by doing" is the basic principle of vocational education. If we are to provide this kind of an education we must set up as many practical ways of doing things as we can successfully carry out under local conditions. The activities which we include in our program of work for the pupils to do should be the same kind of activities which the pupils will do when they are out of school. If we do not meet this requirement we will create in the pupil's mind an entirely wrong conception of the reality of the life which he will face in the after-school period, and will, therefore, have failed to carry out a true program of vocational education.

In vocational agriculture the program of supervised farm practice offers an excellent opportunity to provide the pupil with many real life experiences which can be directly carried over into the after-school period. In order for this program to provide the pupils with these valuable experiences, it must include projects of size and quality comparable to similar enterprises as carried out by the best farmers of the community. This means that it will be necessary, in many instances, to raise the standards of our supervised farm practice program in order that these practices, as carried out under school supervision, will be the same as the practices carried out under actual farming conditions. It will mean that projects of such small size as to be inefficient in operation will need to be increased to a unit of profitable size. Quality of projects cannot be over-emphasized. With costs of production high in all enterprises we should insist on the best of livestock and seed. Size and quality of projects should be considered together, for a project cannot be successful and have size without quality or quality without size. In addition to size and quality of projects we should insist on our boys carrying out the best recommended management practices. This will call for proper cultural operations, good care of livestock, and a systematic, neat, and accurate recording of all transactions, labor, and other items connected with the supervised program.

The teacher of agriculture must be the key man in seeing that a program of this kind is carried out. He must arouse the necessary stimulus for boys to desire to carry a program of this kind. It will be necessary for the teacher to formulate and hold up before the pupils lofty ideals of supervised practice work. To create interest in this type of work the teacher should remember that first he must be interested himself. The teacher will need to work out with each boy his individual problems and then stimulate

in that boy a strong desire to master these problems. In working out a program of supervised farm practice with a boy, the teacher should always stress that whatever the boy does he should do well. It is the duty of the teacher to point out to the pupils that the secret of success is not in doing what one likes but in liking what one does.

One of the most helpful devices in stimulating pupils to carry a real program of supervised farm practice has been the state project contest sponsored by the Department of Public Instruction of the Commonwealth of Pennsylvania for the last 10 years. Minimum requirements of size are set up for entrance of projects in this contest. Suitable awards are made to the boys whose projects score highest in each type of project enterprise.

The policy of the state project contest committee is to encourage long-time project programs thru continuation and supplementary projects. They, therefore, award a premium of five points to a project score for animal continuation projects and a premium of two and one-half points for plant continuation projects. They also set a minimum of 50 percent pupil ownership for all projects entered in the contest with a recommended 100 percent ownership. It is interesting to know that when the State Project Contest was started only 10 percent of the projects of the state met these standards while today over 50 percent meet or are above the minimum requirements.

Once the desire to carry out a challenging farm practice program has been aroused in the student, the next problem is to secure the co-operation and interest of the parents or guardians. This is vitally important if the boy is to carry out a satisfactory program. There are many different approaches to this problem. A few methods will be discussed which have been used in the Tunkhannock Community and found to be very successful. A visit early in the year to the home of each boy where the boy, his parents, and the teacher frankly discuss what the boy wishes to do with project work will be very helpful in winning the support of the parents. In many cases where the parents are not progressive it may require a great deal of effort on the part of the teacher to secure their co-operation. It has been noted that when suggestions for improvement can come from the parents they usually take much more interest in the program. Following this preliminary conference, the detailed plans of the suggested program are worked out with the boy. A copy of these plans is then sent with the following letter to the parents.

"Dear Sir:

"One of the most important things which a boy should derive from his education is a sense of responsibility to handle himself and his problems in the

best possible way.

"I am endeavoring to so plan and organize the vocational work here at Tunkhannock that the above-mentioned objectives may be reached. I believe that the proper place to do this is in project work where the boy will have definite practice presented to him.

"By project work I mean actual farming practice carried out at home under your and my supervision and guidance. This work should be definitely planned and carried out according to the best recommended practices. This program of supervised farm practice should follow the natural interests of the boy with enough work in other farm enterprises to allow him to explore their advantages and disadvantages. In so far as possible I believe it is very advisable for the boy to actually own his project and assume all responsibilities and risks connected with it.

"One of the serious faults in project work during the past has been the relatively short time spent on any one project. For example, a boy often takes a project in potatoes one year, changes to dairy the next year, completely forgetting the project of the former year. This does not make a proper atmosphere for the development of the habit to stick to a thing until it is finished. In an attempt to correct this fault, we have been advocating a program called "long-time supervised farm practice program" in which a boy starts with a conservative type of program, and builds on to this, each successive year, until at the end of his high-school training he has organized an actual business of such size as to challenge the managerial ability of any boy. There is also provided in this type of program an opportunity for the boy to take up different kinds of enterprises during this period.

"The ideal type of program should consist of one main enterprise which would improve in quality and increase in size each year, together with enough other enterprises and supplementary farm practice, that the boy will have an opportunity for a well rounded education.

"I am writing to you to ask your co-operation in this matter. It will mean considerable sacrifice and patience on your part. Without 100 percent co-operation between you, your boy, and myself, this type of farm instruction can never be given. I am sure, however, that we are all interested in doing everything possible to provide the type of education which will do your boy the most good.

"Your boy has expressed a desire to carry out the enclosed plan of supervised farm practice. Will you kindly inspect it closely with him and modify or change any or all parts? When a final plan is made I hope that it will be something valuable for the boy. Will you kindly send to me within the near future your reaction to this matter?"

Sincerely yours,"

THE AGRICULTURAL EDUCATION MAGAZINE April, 1938

After the interest in the program of work given by there are other laurels which the ambitious boy can win for himself. You have an opportunity to enter your project in the state project contest and compete with other boys of Pennsylvania. Here is an opportunity to visit the Farm Show at Harrisburg next year and have a medal presented to you. Study the score card by which your project will be scored and apply those points to your project.

"Remember that a boy who carries to completion a fine project program has something of which he can well be proud."

During the summer months a frequent inspection of the projects is made by the supervisor to check on the progress of the program and to keep the boy encouraged and enthusiastic about his work.

During the past year a moving picture was made of the vocational work, in which a large portion was devoted to the project program. Whenever possible, both the boy and his dad were included in the picture. This proved to be one of the most helpful means in stimulating interest in the boy and securing the co-operation of the parents. All the boys wanted their projects to look their best for the pictures and so a great deal of care was given to details. This picture was then shown at the annual F. F. A. Father and Son banquet where new boys and their dads as well as the others had the opportunity of seeing the projects in actual operation.

The F. F. A. organization has proved to be a very valuable asset in helping to improve the supervised farming program. The boys, in their meetings, have set up the goals and objectives which they wished to reach in project work during the year. Thus what might have been an "unnecessary chore" to them has been a serious undertaking on their own initiative. The chapter offers prizes for outstanding project work, sponsors project tours, provides for discussions on project work, provides funds for motion pictures, and in a great many other ways makes a real contribution to the betterment of the project program.

All methods or devices used in developing a satisfactory farm practice program must first point out to the boy an ideal type of program and then stimulate in him a desire to carry out such a program thru the co-operation and support of all parties.

"Remember, that in addition to the

of work gives you there are other laurels which the ambitious boy can win for himself. You have an opportunity to enter your project in the state project contest and compete with other boys of Pennsylvania. Here is an opportunity to visit the Farm Show at Harrisburg next year and have a medal presented to you. Study the score card by which your project will be scored and apply those points to your project.

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Developing Project Plans

L. L. RULLA, Teacher,
Bridgport, Nebraska

IT IS generally agreed that those things are done best which are most carefully planned. Without doubt every teacher of vocational agriculture has had more or less difficulty in getting his boys to write satisfactory plans for their projects. For years the plans I secured from my boys were inadequate and, as a result of my study of the problem, I have evolved the following plan which gives rather satisfactory results.

As soon as possible after school begins I have the boys choose or set up their project programs. As a preliminary to

class the possibilities of the various enterprises adapted to the community. When they have chosen their projects I have each boy write a preliminary plan for each of his projects using the following outline for a guide.

Outline for Writing Preliminary Plans

1. Talk over your plans with your parents and instructor.

2. Explain the agreement with your parents; as cash or share rent, who will get the profits, who will do the work, etc.

3. Give the kind and size of each project.

4. Give your reasons for choosing each project.

5. Tell when they will begin.

6. List the equipment you will need to carry on your program and indicate that which you now have.

7. Make a list of the jobs you will do from the start to the finish in carrying out each project.

8. Make a list of the jobs you will need further information on or experience in before completing your program.

9. List all the different records you will keep.

10. Explain your plans for carrying your program over a number of years.

11. Explain how you are going to study cost of production figures carefully and try to produce livestock and crops on an economical basis.

12. Include a statement of the adaptability of the enterprises to the home farm and to the community.

13. Add any other information not included in this outline which will explain further your individual plans.

In giving the boys this outline I instruct them to include all the points listed in the outline, but to arrange them in any order they choose. This plan permits individuality while securing completeness. I require them to be written out and receive my approval before they are copied in their record books. After the preliminary plans have been approved and copied in their books we are ready to begin on the job plans. A job plan must be written for each job listed in the preliminary plan. I have the boys study the various jobs in class and then write their plans for each job immediately after studying that job. These jobs must be studied and the plans written before the boy performs them. In writing his job plans I have the boy use the following outline with the same instructions that were given with the outline for writing preliminary plans.

1. Tell what you are going to do.
2. Tell when you are going to do it.
3. Tell how you are going to do it.
4. Tell why you are going to do it that way.

I require the plans to be written in narrative form. By emphasizing that we are studying a job in order to prepare to perform it in their projects, I am able to secure more interest and a more thoro mastery of the subject. Using this method of writing project plans has resulted in a clearer understanding on the part of the boys as to what it wanted in project plans and also in clarifying the aims of project programs. It vitalizes the work of the classroom and correlates the work in class with the project program. We have found that the present project record book does not allow sufficient space for detailed plans such as are secured by this method.

THE AGRICULTURAL EDUCATION MAGAZINE April, 1938

Farmer Classes

V. G. MARTIN

J. B. McCLELLAND

My First Part-Time Class

H. C. COLVETT, Teacher,
Crockett Mills, Tennessee

MY FIRST experience in part-time work began in September, 1935. While visiting all-day students, I contacted Future Farmer alumni and other leading young farmers, and discussed part-time work with them. They seemed to be interested in work of this kind. We called a meeting for the last Tuesday night in September, and 28 responded. The purpose of the meeting was explained, and all present seemed to be ready to start working that night.



H. C. Colvett

The following officers were elected: president, vice-president, secretary and treasurer, and reporter. After the election the president presided over the remainder of the meeting. He asked for suggestions for increasing the enrollment of the class. Several suggestions were offered, and it was decided to form two sides (yellow and green) to compete with each other in securing members. A leader was chosen for each side and it was decided that the losers entertain the winners with a fish fry the following spring. For members to be eligible they must attend at least 50 percent of the meetings.

The age limit was 15 to 30 years. We decided to meet once every week and to ask the young ladies of the community to attend once each month. Each member was asked to name the subjects he would like to have discussed during the meetings. Some of the most important ones were as follows: cotton contracts for 1936, field selection of seed corn, cover crops and their importance, orcharding, pruning and spraying, soil conservation, farm management, farm accounting, outline of 12-months farm program, culling poultry, and varieties of cotton.

The class assembled at seven o'clock for a 30-minute social period; the class work began at 7:30 and continued for one hour. In order to develop leadership the class selected a leader for each discussion. The subject for each lesson and the leader were chosen one week in advance.

On the fourth meeting night, there were 87 present, 61 men and 26 ladies. Both groups assembled for the first 30-minute period, then the men continued their work as usual and the women assembled in another room with the local home economics teacher in charge. They organized like the men, but were meeting only once a month. All the members of the ladies' group agreed that they should meet regularly with the men. Some of their subjects

were: preparation of school lunches, interior and exterior decoration of the home, cheese making, mattress making, flowers, shrubs and evergreens, child care, and sanitation.

As the classes continued, the question of expenses was raised. The members decided to sponsor a play. The players were limited to members of the classes. The play was given and the net proceeds of \$25.75 were used to pay for notebooks, pencils, coal, light, etc.

Some of the achievements of the men's group are as follows. The members learned to understand every important phase of their cotton contracts. A large percent of the members practiced field selection of seed corn for the first time, and a large percent of the group sowed cover crops last fall. Ten members have added orchards to their farm programs. Three members pruned 60 acres of orchard and grafted 18,000 apple trees for the market. The spray program was thoroly discussed and put into practice. One hundred percent of the farmers co-operated with the 1936 soil conservation program.

As cotton is the chief cash crop for this section, several class periods were used for the discussion of the recommended varieties. As a result of the study a pure seed club was organized for the purpose of forming a one-variety community. The organization purchased enough certified D. P. & L. No. 11 acid delinted seed direct from the originator to plant 200 acres. They agreed to co-operate in the ginning and marketing of this cotton and sponsored gin days for the cotton. The lint was sold at a premium of one cent per pound to the highest bidder. The seed will be sold to other farmers in the community. The club members are co-operating in buying other seeds, as corn, beans, peas, lespedeza, cloves, and sorghum. They have already saved several dollars by this method of buying.

The county agent, home demonstration agent, county superintendent, and local teachers co-operated with us during these meetings. The class met 30 times with a total enrollment of 112 members. Interest continued thru the last meeting but we thought it best to discontinue for a while as farmers were busy with their spring planting.

In addition to the above class, we organized three other classes in adjoining communities—one with an enrollment of 78, meeting 12 times; and another with an enrollment of 42, meeting eight times. Another had an enrollment of 180 and met 15 times. These classes were organized on the same plan as the first. Future Farmer alumni played an active part in all these classes. We had good interest and attendance in the last three classes but they were all on dirt roads and after the weather became bad we were not able to finish the work with them as planned.

In working with these classes, I have noticed that the Future Farmer alumni are outstanding. The young farmers are really interested in learning to solve their own problems pertaining to agri-

culture. I believe classes of this kind will reach the out-of-school boy and develop leadership where nothing else will.

Counting all four classes, we have enrolled 412 members and have held 65 meetings. I believe the work has been worth while. I have enjoyed every meeting and am looking forward to starting again after the farmers' busy season is over.

Results of Part-Time Instruction

F. A. PITTMAN, Teacher,
Cherokee, Alabama

WE HAVE conducted at least one part-time class each year since the school was organized in 1923. During this period we have had enrolled a total of 109 boys. Out of this number 53 re-entered school to complete their high-school course. This type of vocational work has been of untold benefit to the school and community in getting a hold on boys, who from some reason or other became careless and indifferent towards the school and dropped out at an early age. We have uncovered a number of boys thru this type of vocational training, who have completed the prescribed course of study set up by the state department of education for accredited high schools and have become substantial citizens, many of them farm owners or farm operators. For an example, in 1927, W. M. Clingan, a young married man 22 years old, was working as a laborer at an asphalt mine with practically no ambition in life. We succeeded in getting him in a part-time class, his interest was aroused, and during the summer he succeeded in getting a job driving one of the school busses. That fall he started his high-school course, completing it in 1932 with a general average of 88. He was a member of some type of vocational training class each of those five years. After graduation he became manager of a farm consisting of 800 acres. He served in this capacity for three years. He made such a success in this farm capacity that the Alabama Agricultural Extension Service employed him as assistant county agent in charge of the terracing and soil improvement program. Today he leads the entire state in this type of work.

Earl Paden is another student of this group that completed his high-school course. He was very thrifty during his high-school years and saved enough money to enter college. Paden is in his second year at Alabama Polytechnic Institute at Auburn, preparing himself to become a teacher of vocational agriculture. I am confident that he will make a vocational teacher of the highest type.

Another boy came to our attention in 1929, whose name was Hollis Bozeman. He was also a young married man with one child. After deciding to re-enter

school he was fortunate enough to get a job as one of the school bus drivers. Bozeman soon became a very good carpenter and before he finished his schooling he was making extra money building bus bodies for the county. Bozeman today is a partner on a large farm.

William Mason was picked up after he had completed the sixth grade. He became interested in farming and farm life, carrying during his four years in vocational agriculture one of the best supervised practice programs that has ever been completed at this school. William was a good student and very popular with the student body. During his school career he served in every office of the local chapter of Future Farmers of America. He also received honors from the State Association of Future Farmers, serving one year as vice-president and in his senior year was elected to the office of president. Today William Mason owns a farm and is carrying out a splendid program of general farming.

The above examples are a few of many that could be given. Personally, I consider part-time instruction one of the most important types of vocational training.

Fathers of F.F.A. Members

T. R. SCHREINER, Teacher,
Ponca City, Oklahoma

IN FOSTERING a program of service in any community, the fathers of F. F. A. members are sometimes neglected in both project visits and adult evening classes. The study of the ways in which father and son co-operate in individual homes was more easily understood as the result of an organization for fathers of F. F. A. members established in the Ponca City community.

Each father having a son enrolled in agriculture received the following letter: "Dear parent:

May I take this opportunity to thank you for the splendid co-operation of you and your boys enrolled in agriculture and for the moral encouragement you have given your sons.

I hope you are encouraging your son to take agriculture because you would like for him to continue farming or continue with some line of agriculture in the future.

There are many occupations related to farming for which your son may prepare. But none would be more beneficial to him if he loves the farm.

I am calling a meeting of all of the fathers of boys enrolled in agriculture so we may work out, as a group, a program for the future of your son. A program of entertainment has been arranged and refreshments will be served after the meeting."

The thought of planning the future of their sons seemed to awaken within most of the dads a desire to give more thought to their sons, as to what they would prepare themselves for in later life. The thought was revealed to me by the splendid attendance at our first meeting. Individual questions asked by many fathers indicated that some fathers had not considered the future of their sons, some had not realized the time would be just a few years before their boys would be developing a livelihood

for themselves, while others present had discussed this problem with their sons. Twenty fathers attended the first meeting, at which time the complete program of vocational agriculture was presented. This clarified the thinking of some of the fathers who might have had a vague idea as to what constituted the program in this community.

The idea of organizing was presented along with the values obtained for discussion. As the result, officers were elected and the club named "Fathers of Future Farmers" or "F. of F. F. A." A program committee was appointed and monthly meeting dates were set. All present entered into games of domino and pitch while individual fathers discussed the possibilities of their sons with the teacher. The main topic for discussion during the social hour was that of deciding which farm tractor was more efficient, John Deere or McCormick-Deering. Varied tales were related by members present.

Monthly meetings have been held regularly with above-normal attendance. Topics for discussion consist of present agricultural situations and developments, agricultural legislation, school legislation, and problems relating to the local agricultural department, and F. F. A. activities.

The purpose of the organization F. of F. F. A. serves the local teacher and agriculture department in the following way:

1. Act as advisory council for department.
2. Contact men in organizing adult evening classes in rural districts.
3. Assist with community fairs.
4. Represent farmers of community on agricultural committees of local chamber of commerce.
5. Assist teacher and boys in obtaining better seed, livestock, and poultry.
6. Assist in employing F. F. A. boys on farms during the summer months.
7. Assist in community pest eradication.
8. Assist with community soil conservation program.
9. Assist in organizing community field tours for adults.
10. Assist in planning annual "Farmers' Day."

What's New in the Teaching of Agriculture

L. I. SAMUEL, Supervisor,
North Area, Arlington, Texas

THE many vital steps taken by the Federal Government during the last four years to improve the agricultural and employment situation has created a number of new situations in the teaching of agriculture. Many farm boys have been enrolled in CCC camps. These groups are affording a new opportunity for the teaching of agriculture to these out-of-school young men, many of whom will go back to the farm. Vocational agriculture teachers are being encouraged to teach courses in agriculture to these groups wherever there is sufficient interest.

Soil conservation projects are serving as practical examples of the latest and most modern methods of conserving soil and water. A number of vocational agriculture teachers in Texas have been

studying these projects with splendid co-operation of the men in charge and their helpers. These teachers in turn are adding these modernized practices to the soil and water conservation programs in their communities thru the classes for school boys and the adult farmers.

Trends in the teaching of agriculture are toward the emphasizing of agricultural economics as a result of the increasing interests in supply and market demands of farm commodities, crop insurance, farm credit, tenancy problems, orderly marketing, home ownership, etc.

Agricultural leaders are realizing more than ever before the value of an understanding, on the part of farmers, of the basic principles of agricultural economics. The farmer is becoming more interested in solving his farm problems, which will help him to balance better his farming program. His interest in attending evening schools and other educational meetings is further stimulated by the checks he has received for complying with the better farming program. This makes the teaching of agriculture easier, as it serves as a tonic not only to the farmer but also his sons, who may have an opportunity of studying agriculture.

The New Deal for the farmers has agitated the improvement of living conditions on the farm. The teaching of installation of home conveniences and beautification of farm homes has been made easier because of the increased interest in these things.

Another new factor in the teaching of agriculture in Texas is the public school curriculum revision movement. Since this revision movement is tending to make the school courses more practical, educational leaders are looking upon the teaching of agriculture with more favor. The vocational agricultural forces have been using the farms and ranches as laboratories for the teaching of vocational agriculture for a number of years with gratifying results. Curriculum revision committees are planning to have agriculture studied even in the lower grades of public schools. Courses in agriculture will not be offered to these youngsters as such, but it will be covered in connection with the child's life problems as he is led, by his teacher, to discover them.

Increasing emphasis is being placed on leadership training in teaching agriculture to farm boys. Numerous contests are being sponsored in public speaking, extemporaneous speaking, parliamentary procedure in conducting group meetings, essay writing, and news writing. Teachers of agriculture are aware of the fact that the future of farming is dependent upon competent leadership as well as approved farming methods. They know also that none can fight the farmer's political battles better than trained leaders from his own group. Co-operation with other agencies is not new in the teaching of agriculture, but the creation of a number of new agencies has caused this co-operation to be emphasized during the last few years.

THE man with the average mentality, but with control; with a definite goal, and a clear conception of how it can be gained, and above all, with the power of application and labor, wins in the end.—Wm. H. Taft.

The Place of Welding in the Farm Mechanics Program

M. R. WILSON, Department of Shops,
Manhattan, Kansas

THERE have been a good many arguments in regard to the status of welding (either arc or oxy-acetylene) in the farm shop program. Text books that have been written on farm mechanics work have not mentioned this subject. In Kansas, several vocational agriculture teachers have purchased welding outfits for their farm shops and several teachers are contemplating the purchase of this equipment. In one or two places in this state, both oxy-acetylene and electric welding outfits are to be found in the vocational farm shop.

The writer of this article is more or less undecided in regard to this question, but his past experience in the field of welding causes him to question the advisability of placing welding equipment in all vocational agriculture farm shops. Having used one of the first oxy-acetylene welding outfits brought into the state, and one in which up to the year 1915 both gases were manufactured right in the machine itself, and having used a welding outfit to a considerable extent during the intervening years, and having taught some welding to high school boys during some of these years, the writer feels that he is beginning to learn a few things about welding. (It might be of interest to some of the readers of this article to know that the first oxy-acetylene welding machines were equipped with retorts and generators so that the operator manufactured from chemicals the acetylene gas as well as the oxygen gas. The prohibitive price of chemicals shortly after the start of the World War in Europe put a stop to the local manufacture, on the job, of the oxygen gas.)

A few of the writer's first years of contact with a welding outfit were spent in a commercial shop located in the midst of an agricultural section. Welding was only one phase of many types of work that were carried on in this shop which catered to the repair of automobiles, trucks, and tractors as well as all types of machine shop work for the repair of farm implements and threshing machines.

A large percent of the welding was directed to the welding of the different repair parts found on agricultural machinery that become broken during the season.

It was found from experience that in most cases it is best to replace a broken malleable casting from a piece of farm machinery with a new piece, altho the electric arc will do a good job of welding

on a malleable casting if handled properly. The oxy-acetylene flame gives a glass-hard weld on a malleable casting that is easily broken. This is also usually true with plain cast-iron pieces. A broken casting, when welded, is only approximately 80 percent as strong as before, and a malleable casting is much less so when welded with cast-iron filler rod. If the new types of bronze filler rod are used, the weld is usually more successful but in most cases not as good as a new piece.

As far as the cost of the two different types of welding machines is concerned, there is not much difference. The upkeep or maintenance cost will be about the same. Some companies give a discount on the cost of the gas for school use. The rental charge on the tanks must be taken into consideration, as it is quite an item for a whole year. But for universal use in the school shop, the oxy-acetylene outfit has a few minor points over the electric welder. Brazing and cutting operations are not as easy to perform with the arc welder as with the oxy-acetylene welding outfit.

Just what can be repaired with the welding outfit in the school shop to justify its purchase? All types of castings on farm machinery may be bronze-welded, but it is not practical to weld some types of breaks. The final strength will be at least 80 percent of that of the original casting. But many old-time welders refused to light the torch for less than fifty cents, as they claimed they could not afford to do so. If this is true, a casting that is worth a dollar when new is a better buy than a welded one for fifty cents. And of course the larger the break that is to be welded the greater the cost of the welding gas to repair it. It is not practical to weld plain iron braces, as the amateur usually gets a very weak weld. Brazing in this case is not strong enough, unless the break is reinforced with an additional piece of iron.

Brazing of crankcases is very successful, but since the Model T has about passed out of the picture, there are not many crankcases to braze at present. Steel automobile wheels, forges, and the fabrication of farm trailers and other useful articles are possibilities with either welding outfit, altho the arc welder works better and faster on articles of this kind.

The welding of cylinder heads and cylinder blocks is not a job for an amateur with either machine.

Worn shafts can be built up with either type of welding outfit, but after the shafts are built up, it is necessary to turn them to size in a metal turning lathe for accurate work.

The best argument for the justification of the repair of farm machinery by welding is that it is a life saver in the midst of the harvest or haying season when a casting breaks and a loss of time means a financial loss to the farmer unless this casting can be welded at once. Otherwise and at other times, the best procedure is to replace broken and worn parts with new parts, because from a

dollar-and-cents standpoint, there is but very little saved.

Can any arguments be advanced for buying a welding outfit for use in the vocational agriculture farm shop? Possibly the following points could be accepted as arguments in favor of having this type equipment in the farm mechanics program:

1. The best argument is that after having some welding experience, the boys have a better appreciation of what can be successfully welded and what cannot.

2. In certain areas of the great plains states and in parts of certain coast states, farming is carried on on a large scale, and a wheat farmer will own several tractors, combine machines, and trucks. A man farming on this scale would be justified in owning a good welding outfit, and sons of men who farm on this scale should be entitled to training, in the school, which will enable them to carry on successfully in big scale operations.

3. We know from experience that no two farm boys have the same amount of native ability in shop work. We do not know what may be the status of these boys 15 years from now that are in our school shops today, but it is possible that those with the most native ability may be doing most of the shop work of a neighborhood and exchanging work with those who have less native ability along mechanical lines. Welding experience may be a big asset to those with the most native mechanical ability.

4. It is a certainty in the field of vocational agriculture that all the boys receiving vocational agriculture training in our secondary schools will not be farmers, but some will gravitate to the city and there find jobs more to their liking. It is possible that the shop training received in the vocational agriculture shop classes in high school will be valuable to this group. Some training in welding may be valuable to these boys.

5. As a reward to third year vocational agriculture students who have done exceptionally good shop work in previous years, some welding experience may be good teaching procedure.

6. As an aid in motivating part-time and evening school farm mechanics programs, the welding machine of either type has considerable value.

Possibly some of the following points would be acceptable as arguments against having a welding outfit as a part of the farm mechanics equipment:

1. The cost and maintenance of this equipment is high, and any teacher who spends money for a welding outfit before he has sufficient shop tools to take care of all the farm machinery, automobile, tractor, and truck repair jobs that should be taken care of on a progressive and up-to-date farm, has made an unwise purchase. The net returns from work of this kind are far greater than they are from a welding machine. Training for repair jobs on motorized farm equipment will be demanded more and more from the vocational agriculture teacher as time goes on.

2. Three vocational agriculture education were consulted in regard to the advisability of having welding equipment in the farm mechanics program. Two of these men were of the opinion that a welding outfit has very little place in this type of training. The third man was very much in favor of this type of training for third year boys, not only as training that might be useful on leaving schools, but also as a reward to these boys, while in school, for other work well done.

3. Too many schools offering vocational agriculture—and this percentage will run high—are very inadequately equipped to take care of the run of jobs that the average farmer should take care of, let alone the run of jobs that the progressive farmer does take care of; and these schools cannot afford to purchase a welding outfit until all of their other equipment requirements are brought up to date.

4. Observation has shown that in cases where school shops have installed equipment of this type or of a similar nature, the school becomes only a service station for the community, and the boys' services or the teachers' services are exploited to the neglect of other training they should be receiving.

5. In the repair of farm machinery, less criticism will be experienced if new parts instead of welded parts are used in this type of repair work.

6. It takes years of experience for an operator to become very proficient in the operation of welding equipment where he is continually encountering new types of welds, new pieces to weld, new problems in holding pieces for welding, the problem of bolt holes, cooling and heating strains in the castings, the problem of flux and filler rod obstructing openings in hollow or open castings, and the problem of making jigs for special jobs. This is much different from factory fabrication where an operator makes the same weld day after day for weeks and months.

7. If welding equipment is in the school shop, the students will make welds for themselves and are expected to make welds for others that are impractical to make, with a loss of prestige to the school shop that might have taken a long time to build up. Too many times the weld is of an inferior quality, and the results of a poor weld reflect upon the school as well as the teachers.

In conclusion, it might be well to take note of the fact that there are some very good arguments on both sides of this question. In evaluating a problem of this kind, the vocational agriculture teacher can probably find a solution if he asks himself this question: "Am I properly trained so as to be able to do a respectable job of welding, and can I serve the community best by spending the money for welding equipment, or should I spend it for other equipment that will render service to a greater number of students and purchase a welding outfit after my shop is adequately equipped with tools to take care of all the jobs that the progressive farmers of the community will take care of on their own farms?"

There may be luck in getting a good job—but there's no luck in keeping it.—
J. Ogden Armour.

Power Machinery in Vocational Shops

L. R. CLARK, Teacher,
York, Nebraska

POWER machinery has been taboo in the vocational shops in the past, largely on account of the fact that the vocational shop was originally patterned from the old type manual projects with farm needs in mind.

We are living in the greatest agricultural power machine area in the United States; and if we are going to give our boys the training in their problems, we have to have a more extensive shop program.

Every teacher endeavors to make his shop interesting by relating it to life situations, to human interests, to natural impulses, and to acquired experiences and ideals. Shop work is a life situation. School should be life itself where the student can select his own problem.

Conditions are changing; if you make only a brief survey, it shows one very pronounced trend, the increased mechanization of life. This is not a new discovery—it has been going on for years. Look at the production of oats in the United States, and you will discover that the production has declined rapidly since 1919 in direct proportion to the population of horses. This brings about a new kind of shop work in the understanding, use, and repair of power machinery.

Our shop work must continually be kept in a state so it will meet the needs of the farmer. Not all our students are going to make a success of farming, and some are not going to be able to establish themselves in farming. It will then be necessary for them to earn a living at some other vocation. The more things a boy can learn to do well, to which he may turn in time of need to make a living, is a part of any department's work in school. Fully realizing that we are teaching vocational agriculture, we must cover all fields in shop work—electricity, plumbing, blacksmith, auto, tractor, carpenter, and machinist.

What are the shop problems which give the farmer the most concern? It is not the making of a nail box, hog trough, chicken feeder, or putting a bottom in his wagon box. We grant we want to teach the skills in using hand tools. The electrification of farm homes with electric appliances, motors, and the power machinery coming on the farms in the form of autos, tractors, and large machinery, is where we find the shop problems on the farm.

It is our job to teach the repair of farm machinery. What do we need to make these repairs? First, a forge and anvil, grinder, drill, valve refacer and lathe. Forges, anvils, drills and grinders are all picked up by farmers at a premium whenever they're sold at sales, because the boys who have had training are using them on their farms to make the repairs. Farmers are bringing in old materials from grinders, auto parts, gas engines, etc., to have grinders made in our shops to use on their farms, because they are finding a great need for them and have tractors for power to operate them.

Not every farmer will have all the

vocational shop is a place to which, if you will open the doors, he will come and work in overhauling his motors, auto, tractors, and farm machinery. The farmer learns to use this machinery and helps advertise your school and course to farmers, as he sees the benefit of the machinery and his boy's learning to do the job of keeping it in repair. Boys are making a lot of power tools for their farms in the farm shop. The forge, drill, grinder, and lathe make it possible to make drill presses, grinders, forges, hammers, chisels, punches, hacksaw frames, power saws, etc. in the vocational shop. I have boys who say they are going to have a lathe in their farm shop as soon as they are established. It is surprising how many power tools in the form of lathes, grinders, band saws, jig saws, shapers, planers, and sanders are going into farm and city basements and shops. As soon as electricity comes on our farms the power machines will follow.

There are places in every community to do shop work for neighbors as a side line for vocational boys who are well trained in shop practices. I have a boy who graduated several years ago who has established a shop on his farm and reports a very good income in repair work of all kinds.

The lathes in our shop are busy most of the time with boys turning armatures for generators, starters, electric motors, bearings for motors, wind chargers to furnish electricity for their homes, and repair of equipment in shop, school, machinery, and parts for cars. It enables us to do the whole repair in many cases from waste materials or cheap materials, which otherwise would not be accomplished if boys had to pay for new materials and a dollar an hour for skilled labor to make the repairs. It also gives the boys an interest in doing the work.

The lathe enables us to make a large number of tools for jobs we need in our shop in the use of shafts, pulleys, bearings, repairs on forges, drill press, chuck, etc. It was necessary this fall to put new drive shafts in both our forges and new handle grips on shafts; all this repair was done in our shop from scrap iron. All the electric motors have been cleaned and overhauled, with bearings which needed it because of our lathe equipment. Farmers who have or have had boys in school are bringing cars, trucks, and machines to overhaul during the winter months, which furnishes jobs, interest, variety, and a healthy shop program.

The machine age—with the increased problems brought on the farmers with the upkeep, repair, and maintenance of this machinery, together with the increased interest of shop work as well as training the boy in the use of machines and principles of repair, also the additional crafts which a boy may use in case of necessity—justifies the use of all the equipment which boys are apt to find useful in their life work.

EDUCATION thru occupations combines within itself more of the factors conducive to learning than any other method. The occupation becomes the magnet which attracts information and the glue which makes it stick.—John Dewey.

Studies and Investigations

C. S. ANDERSON

Factors Affecting Establishment in Farming A Study of 100 Former Students by Their Teacher

L. B. HOOPES, Teacher,
Muscatine, Iowa

THE author has served as an instructor of vocational agriculture in the Muscatine high school for the past 15 years. The length of tenure seems not to be out of the ordinary; however, it has been interesting to teach in the home community and in the same building from which I was graduated in 1913.

I have always been firm in the belief that the real product of a vocational department is a boy as a future farmer rather than the dollars earned by the home projects.

While doing graduate work at Iowa State College the idea of checking up on the effectiveness of my teaching and the influences of our home, school, and community on former students presented itself. A data sheet was devised to secure from these former students a record of their experiences both while in school and since leaving it. Many questions were asked concerning their home training and their reactions toward present problems encountered in their efforts to become established in the occupation of farming. School and departmental records were also searched to secure as complete a picture as possible of the various influences that might have affected the present status of these former students.

Since the establishment of the department in the fall of 1922, 142 students had completed one year or more of classroom and project work. Of this number, three were deceased, 19 had moved from the community, two were studying for the ministry, five were enlisted in the U. S. Navy, 13 were in various occupations similar to those of the 100 cases interviewed and studied.

I shall review briefly some of my findings regarding the 100 young men studied.

64 engaged in farming—

- 24 were in partnership with their parents
- 15 were on an allowance from their parents
- 14 were farming as tenants
- 6 were farming as farm laborers
- 4 were working for wages with parents
- 1 was farming as an owner

36 not farming—

- 19 in pursuits not related to agriculture
- 7 in professional work related to agriculture
- 6 in college taking non-agricultural courses
- 2 in businesses related to agriculture
- 1 in college of agriculture

Place of residence of former students

- 76 were living in rural homes
- 24 were living in the city

Age and occupation of former students

- 79 were former students 21 years of age and older—62% were farming and 39 were married
- 21 were former students 20 years of age and under—71% were farming and only one married

Home training of wives of married former students

- 80% of those married and not farming had married city girls
- 65% of the 25 married ones who were farming had selected farm-reared girls
- 62% of married former students were farming
- 55% had chosen wives raised in the city

Influence of the home of former students

- 54 came from homes with three children or less
- The 100 families totaled only 393 children, an average of 3.9 per family
- 29 boys were the only sons in the family
- 67% of the only sons were farming
- 68% of the sons with one brother were farming
- 53% of the sons with two brothers were farming
- 63% of the sons with three brothers were farming
- 50% of the sons with four brothers were farming
- 66% of the fathers of former students were owner-operators
- 29% of the fathers of former students were tenants
- 5% of the fathers of former students were non-farmers
- 71% of the sons of owner-operators were farming
- 49% of the sons of tenant parents were farming

Influence of the type of home farm experience

- 78% of the 45 former students from livestock farms were farming
- 56% of the 43 former students from general farms were farming
- 43% of the 7 former students from truck farms were farming
- 40% of the 5 former students from the city were farming
- 52 former students had been in 4-H clubs; 69% of this group were farming

Time of making occupational choice

- 100 former students—
- 58 had not changed their choice of occupation since entering high school
- 17 changed their choice during high school attendance

- 14 had changed their choice since leaving high school
- 11 were still looking for a change from their present occupations

These young men were finding that life held for them some real problems, as their answers to many of the questions revealed. Here are some of their reactions. When asked "What agencies have helped you most in your efforts to get established in farming?" their typical answers were as follows:

- (1) "My father, high school agriculture work, experience, and information from papers."
- (2) "Observation, experience of other people, and the Iowa State College Field Experiment Station."
- (3) "Income from 4-H and vocational projects, money saved while on an allowance, and financial help from father."
- (4) "My father's interest, education, credit facilities of my father, local banks and business firms."
- (5) "Vocational instructor, local bank, and Rural Resettlement Administration."

When asked "What experiences have you had in making advancement?" they replied:

- (1) "Have been in partnership since graduation."
- (2) "Worked for wages for three years and have been in partnership for the past four years."
- (3) "I am working for wages at home with my father. He pays me for part and I get the rest in use of equipment for farming the land that I rent."
- (4) "I have sacrificed personal advancement for the benefit of the family, so far."
- (5) "Worked as farm laborer, then in partnership with brothers for three years, and now for myself."

When asked, "If not farming, why not?" representative answers were:

- (1) "Interested in scientific study."
- (2) "The outlook for agriculture was bad."
- (3) "Was not able to accumulate enough capital to start farming, but was able to start at good money at the oil station."
- (4) "Excess of help at home."
- (5) "Father sold out and we moved to town. Drought discouraged return."
- (6) "Lack of funds to start."

When asked, "What adjustments are needed in our community to aid graduates of the vocational department in establishing themselves in the occupation of farming?" they responded:

- (1) One of the main things is finances, which if not available from some source, would make it nearly impossible to get started."
- (2) "More interest on the part of farmers who are financially able to help

- (3) "A graduate must be willing to wait a while until he gets this experience. A need for some means of credit for a boy who has limited backing at home."
- (4) "An agency for establishing a moderate amount of credit for ambitious, honest young men to start farming with."
- (5) "The establishment of confidence among landlords and other farmers as to the ability of vocational agriculture graduates."
- (6) "More co-operation from parents and helpfulness to enable the son to establish credit for himself."
- (7) "If and when a young married couple, who are mentally and physically equipped to farm, can obtain \$1,500 credit at reasonable interest to start farming, you will see fewer young folks leaving the farm."

Knowing the whole situation as I do, a few of the following assumptions may not be too far wrong.

1. Farming with parents, whether in partnership or on an allowance, is a safe means of advancement for vocationally trained graduates who wish to enter the occupation of farming.
2. The quality of the student's supervised practice program very definitely affects his progress in the farming profession.
3. The scale of farm wages is not very attractive to farm boys.
4. Competition of borthers was more of a retarding factor for establishment in farming than was the total size of the farm family.
5. The farming status of the father is a very definite factor affecting the establishment of the son in farming.
6. The type of home experience of the student should be given greater consideration in the guidance program of the vocational agriculture department.
7. There is a very definite need in our community for a source of credit that would be available to graduates of vocational agriculture departments.
8. There are great opportunities for parents, as well as instructors of vocational agriculture departments, to function in the experience of these former students as they strive to become established in the occupation of farming.

Farmer's Interest Test

M. J. SCOTT, Teacher,
Freeburg, Illinois

WOULD teachers of agriculture like to learn more about the interests of their students? If they could measure students' interest in farming and farm life, would they be in a better position to advise boys who are making plans for the future? Would they be able to do a better job of teaching if they knew more about the interests of their students in farming, including their likes and dislikes? Assuming that these questions can be answered correctly in the affirmative, a test has been devised which, it is hoped, will aid a teacher in learning more about the interests of his students. But before we discuss the test let us look over the situation and see what right a test of this kind has to be in existence. In the past, almost everyone has

accepted the theory that anyone could farm and would be happy at it. Even a majority of the farmers have, apparently, subscribed to the same theory. Agriculture teachers, as well as administrators of agricultural education, encourage boys to go back to the farm. The efficiency of an agriculture teacher is sometimes measured by the number or percentage of students he has had who go back to the farm for their life work.

Fortunately the term "farming" is broad enough so that practically everyone can find something of interest to him if he has to make a living on the farm, even tho he would be much better fitted, mentally and physically, for some other kind of work. It is the opinion of the author that we should have a scientific method of determining in advance which boys are going to get the biggest thrill out of farming. If interests can be taught and encouraged honestly maybe this test will measure the success of a teacher in that task. We are interested in guidance.

Strong has a Vocational Interest Test¹ designed to show what vocational group a person's interests are most like. In standardizing his test, he gave it to a number of people representing different occupations. From their response he formulated a key for each occupation. A person taking the test could be scored with each group key to see which one his interests are most like. The information gained is helpful in any program of vocational guidance.

Strong has a key for farming interests, but to the author, it does not seem so well fitted for farmers or farm boys because of their lack of background. It seemed that the Strong Test needed a supplementary one for farming. Working under the direction of the Education Department, Washington University, with special help from Professor Wright and Dr. Lentz, the author has developed a test with 60 yes-no items, 41 like-indifferent-dislike items, together with a section which gives a person taking the test an opportunity to rank 12 different occupations in the order of his preference. The real value of it as a measure of interest in farming has not been determined as yet. It will be determined by giving it to different groups of people to see whether it shows a difference in them or not.

The groups selected as representative are as follows:

1. Outstanding students who are definitely interested in farming as a vocation.
2. Successful farmers who are enthusiastic about their work.
3. Good students in school who are not interested in farming.
4. Adults who, in a teacher's judgment, are not interested in farming. These people may or may not be farming at present.
5. Students who earn low grades in school, but are very much interested in agriculture or farming.
6. Students who earn low grades but are not interested in farming.

A number of agriculture teachers are assisting in standardizing this test.

Anyone desiring copies of the test for his own use may purchase them for the cost of printing, which is one cent each in lots of twenty or more, from the author. Farmers and students enjoy taking the test, and many claim it

is educational in that it forces a person to evaluate his opinion as well as state his likes and dislikes. We, however, feel that its usefulness will be greater after it has become standardized.

1. Strong, Edward K., Jr., Vocational Interest Test, Stanford University, 1928.

Status of Former All-Day Students

SAM HITCHCOCK, State Supervisor,
Cheyenne, Wyoming

A RECENT survey was made in Wyoming to find out where former all-day students in vocational agriculture departments had gone. Eight departments were selected where records had been kept on these students from five to fifteen years.

A total of 744 students has been graduated in these departments. Referring to survey sheet, it will be noticed that 77 own their own farms and 63 are renting. Considering these boys as already established in farming, we find this number is 19 percent of the total. Of the entire group 100 boys are in non-agricultural occupations, or in other words 86 percent of the boys are engaged in agricultural occupations and 16 percent in other lines of work.

This record shows that vocational agriculture in Wyoming is effective in establishing boys in farming. A large percentage of these boys makes up the groups for part-time classes in the communities where the survey was made. An attempt will be made to keep this survey up to date and further study will be made.

1. Number who own farms or are buying farms..... 77
2. Number who are renting farms... 63
3. Number who are farming with parents:
 - a. as partners under a definite agreement..... 50
 - b. on a definite or indefinite allowance..... 60
 - c. developing one or more farm enterprises from which they receive income..... 17
 - d. working on wages..... 37
4. Number who are partners in a farm business (not on a home farm)..... 17
5. Number who are farm managers 9
6. Number who are working on farms for wages (not on home farm)..... 84
7. Number in occupations related to farming..... 48
8. Number in agricultural colleges. 38
9. Number continuing their education in non-agricultural colleges and other institutions... 20
10. Number in non-agricultural occupations..... 100
11. Number deceased..... 21
12. Number not reported:
 - a. moved away from the community*..... 91
 - b. other..... 12

Total— 774

* (Students who live so far away that the teacher cannot maintain personal contact with them, may be classified as having moved away.)

Future Farmers of America



L. R. HUMPHERYS

Putting Money into the F. F. A. Treasury

H. I. MAGLADRY, Teacher,
Longview, Washington

THE Smith-Hughes department can in some measure be gauged by its Future Farmers organization. Ways and means of keeping up a good organization should be of interest to all the boys and their instructors. While problems in the Pacific Northwest might not be those of other sections, the problem of putting money in the treasury is a universal problem, and a short discussion of it may be of value.

Our chapter is going on its fourth year of existence, but until September, 1935, its temperature was subnormal, the finances in its blood stream were shy, and its life was sluggish. With an enrollment of 23 in the department only 15 were members and of those 15 only five showed any desire to keep the chapter alive. In the fall of 1935, enrollment had a healthy increase and ways and means of raising money were discussed. Since then the following projects have been attempted and carried out:

Produce bought and sold netted around \$20. Two hogs purchased, butchered, turned into sausage, and sold, netted approximately \$12, at the same time giving advanced classes an opportunity to learn by doing. Pruning and spraying projects, except when done for a member of the class, have brought in 30 to 50 dollars a year. It has been found advisable to charge for all work done for non-class members; otherwise, requests become so numerous that it is only by creating hard feelings that one can refuse some patron a service that is not demanded when charges are made. Most of this work is done on free time and some on Saturdays.

In each of the last two years we have put up exhibits of agricultural products which have netted us close to \$100. The exhibits have paid well and besides that, have given us a prestige in the locality as county advertisers.

Our experimental plot just about pays for itself. Last year 28 crates of potatoes brought three cents a pound. A small patch of sweet corn canned out 15 cases with a net profit of \$1.60 a case. One and one-half acres of cannery peas paid just enough to treat the boys who worked in them to a good show.

Again it might be of interest to tell how we spend our money. Part of it goes into a Future Farmer Permanent Loan Fund from which boys may make loans to finance projects. This fund at the present time is \$170 and is 15 months old.

Over \$200 have been loaned and there is at this time \$60 outstanding. Three percent interest is charged. All expenses

of the experimental plot except the ploughing have been paid by the chapter. Fun meetings are financed, and it took about \$15 to finance the annual F. F. A. Fun Feed. Last year we took a 300-mile trip and this year we are planning one of 400 miles. It is financed by the chapter. Some small tools have been bought this year.

Alfalfa seed has been bought and given to the boys for trial plots. A gold medal is purchased annually for the outstanding Future Farmer of the year, and a \$5 prize is given to the boy having the best project of the year.

At present the enrollment of the class is 55, and the membership in our chapter is also 55. The boys seem to be very interested and work for the betterment of the department and the chapter. In the last two years the chapter has increased from the poorest to the strongest in the school and while the department has probably not become the strongest in the school, it has taken its place among the better-thought-of departments.

Remember you have to have money before you can spend it and anything that is alive must have life blood. Put some money in a treasury, spend it judiciously, and watch your department improve because you have a live chapter backing it.

The Clymer F. F. A. Hatchery

G. H. PAINTER, Teacher,
Sabinsville, Pennsylvania

IN STUDYING farm management the Future Farmer boys came to the conclusion that most farmers in this community would have a better balance of business if the poultry industry was improved and enlarged in the township. The leading livestock enterprise of the township is dairying. They still think that dairying should continue to lead, but if more farmers would develop the poultry enterprise the farm program would be resting on firmer footing.

With the above thought in mind the question that naturally came before them was, "What can we as an organization do to improve the poultry business of Clymer Township?" The answer to this question was to stress poultry as a subject for study, for project work, and to include poultry as a topic for evening classes. To add still more push to our poultry activities we conceived the idea of a Future Farmer Hatchery.

The purposes of the Clymer F. F. A. Hatchery are:

1. Help the poultry enterprise of Clymer Township.
2. To give practical education in hatching and brooding of chicks for all agricultural students.
3. Profits from the hatchery to be used to improve the department.



4. To add interest to the course.
5. To train the boys in business principles.
6. To teach co-operation in production and marketing.
7. To help develop responsibility and initiative in boys of the teen age.

The administration of the hatchery consists of the regular officers of the Future Farmers chapter. A set of accounts are kept by each of the following officers: secretary, treasurer, and adviser. All business is done by checks. Each check is signed by the adviser and treasurer. The accounts are audited by capable persons in the community at stated intervals. An account of the business is made public by the auditors.

One of the greatest problems to overcome was to get financial support for this adventure. Finally, the local chapter borrowed \$500 from an interested citizen and the school board backed the note.

We then secured the services of WPA labor to dig out a portion of the basement of the school house for our incubator cellar. A good-sized room was partitioned off with a high ceiling, well ventilated without drafts. The floor was cemented. The F. F. A. boys bought the lumber and material for this room.

We then purchased a new, all electric number 8 Fantype Buffalo Incubator with a capacity of 2,080 eggs. We purchased this machine thru a local merchant and he gave us his dealers' discount. This incubator cost \$134.87.

A 12 by 16 brooder house with a basement underneath was then built. The upper story is built of novelty siding, lined with celotex, and plastered part way up the sides. The Cornell system of ventilation is used with the shed-type roof. Double flooring was used to insure warm floors. Cinder blocks were used for the basement and tar was used for the outside to keep out the moisture. The floor is concrete, with two drains. This year we are using part of this room for the battery brooder and the other enclosed part for the incubator. The cost of this entire building with the electricity installed was \$260.80.

We purchased a new Buckeye Battery Brooder with a capacity of 500 day-old chicks. This machine cost \$73.27 delivered. A gas colony brooder stove was purchased for \$9.08. We now have brooding facilities for 800 to 1,000 day-old chicks. We have other small equipment.

The eggs for hatching are secured locally. The breeding birds are selected by the agricultural boys from the best flocks in the community. The breeders have been tested by the vocational boys for B. W. D. by the stained antigen test.

The turning of the eggs in the incubator, candling, setting of the eggs, and cleaning of the incubator is done by the

first year our receipts were \$327.09. However, the \$500 borrowed did not pay for all our expenses, so we could pay only \$100 on the principal plus the interest.

The financial standing of the business at the end of the first year was as follows: liabilities, \$400, plus interest; assets, \$530.

This F. F. A. hatchery aroused interest and brought a decided improvement in the poultry flocks of Clymer Township. For the coming year we will have at least four flocks from trap-nested stock and B. W. D. tested by the tube agglutination method. This can not help bringing about an improvement in the poultry flocks of the community.

The hatchery had made the F. F. A. chapter a live organization in the community as well as helping the individual members. It has made it possible for the boys to actually lead the way in the improvement of poultry in the community that would not have been made at this time in any other way.

F. F. A., a Vital Part of Vocational Agriculture

ELDOR SPLITTGERBER, Teacher,
Sargent, Nebraska

TEACHING vocational agriculture without a Future Farmers organization is much like farming with little or poor equipment, it just cannot be done properly. The teachers of vocational agriculture have many duties that cannot be accomplished without some outside assistance. What organization would help if it were not an organization of farm boys? These Future Farmers are as vitally interested in the promotion of agriculture and the success of their department as their instructors.

The help of an F. F. A. organization can not be measured. Without an organized group of boys with which to plan various vocational activities we soon find interest lagging. We teach co-operative marketing, co-operative buying, and other forms of co-operation. Our greatest laboratory is our boys. Organize them, and their activities will largely be co-operative. Some individuals may co-operate more than others, but this is largely true of all co-operative efforts.

The question might be asked, "How does the F. F. A. help vocational agriculture?" Let us for example use the Sargent Vocational Agriculture Department. During the past seven months the Sargent Chapter of the Future Farmers of America has among many other activities accomplished and promoted the following excellent jobs:

1. Stimulate interest in livestock judging by conducting a local judging contest. The boys judge about eight classes of livestock. The winner of the contest is awarded a medal with the F. F. A. insignia inscribed on it. The value of a contest of this type lies in the fact that we can not take all students to the state and district contests but all can participate locally.

2. The F. F. A. obtained membership in our part-time class by inducing boys to attend and by sending form letters to prospective members. The F. F. A. members entertained the part-time class

grams of music, readings, and speakers. The part-time meetings were held on Saturday afternoon and Monday evenings. The Saturday afternoon classes were visited by a number of eighth grade farm boys. In talking with the boys we know that we have a nucleus for our first year vocational agriculture class next year.

3. The F. F. A. advertises and stimulates interest in vocational agriculture thru its many activities that are given publicity in the local papers. The various F. F. A. members are encouraged to bring other farm boys to our F. F. A. meetings, which helps increase our enrollment in vocational agriculture. The F. F. A. also as a good-will gesture furnished an hour entertainment at a rural school. About 150 people witnessed the performance, and again, the Future Farmers of Sargent promote interest in Sargent High School.

4. The Sargent F. F. A. maintains interest in itself by having a well-planned program at each meeting. The programs are usually musical or light in character. At every meeting we have had some speaker, usually some businessman speaks on various topics of interest. At each meeting a lunch is served, this lunch is brought by a committee designated by our F. F. A. president. The various members serve their turn in furnishing the refreshments. Our average attendance has been well over 40, with a top meeting of 65 boys. The lowest mark reached on a disagreeable evening was 32 members. The F. F. A., in order to interest boys, must have something for them to do in helping the organization. In the Sargent Chapter every student has some job to perform that is an accomplishment for the chapter. Make it a farm boys organization for each member and the F. F. A. will succeed.

5. The Sargent F. F. A. attempts to develop leadership in the classroom and in other activities by sponsoring debates, public speaking, tryouts for the state public speaking contest, and supplying entertainment for other high school programs. Our F. F. A. officers are to be elected in a unique way. The idea is our own, but perhaps other chapters use the same procedure. To eliminate the election of unfit or irresponsible students to responsible F. F. A. offices we plan to conduct a campaign much like a political campaign, only it will be non-partisan. Boys who really want responsible positions in a worth-while organization can submit as their campaign speeches various programs of work that they will support. This should bring out the leadership abilities of the various candidates, and poor selections of officers are eliminated. Many F. F. A. chapters are partially inactive because their officers are lacking in leadership.

6. One of our biggest F. F. A. jobs of the present school year is the publishing of the school paper. This job was made more difficult because we rotated the work in the actual publishing of the paper. This meant that new students had to be taught various jobs. Certain boys were given responsible jobs to complete and only on one occasion was our paper late. This job helped the students in so far as actual writing and reporting is concerned. The paper, while it contained school news, was largely F. F. A. and vocational agriculture in

material. Our F. F. A. project and vocational agriculture materials covered three pages of the six-page publication. If there is no news-writing class for the coming year, the F. F. A. will again publish the school papers. It gives us some valuable publicity.

An active F. F. A. organization is the backbone of any vocational agriculture department. The job of good teaching cannot be done effectively without a farm-boy organization. Personal experience has proved this because I taught one year of vocational agriculture in an area not F. F. A. minded. The job was twice as difficult.

Pruning and Spraying—Community Project

GLEN C. OLSON, Teacher,
Lyons, Nebraska

THE problem of the care and management of the orchard is probably most commonly neglected in our local communities. According to a recent survey made by the boys of the local Future Farmers of America chapter, there were at least 75 percent of the fruit trees of this trade territory that have been neglected in the care of pruning and spraying. This improper care has been due largely to the following reasons:

1. Lack of information and knowledge on the subject. 2. Lack of proper pruning tools and spraying equipment. 3. Trees too few in number to take time off for the proper care at the proper time. As a result, the fruit which was left to be harvested was of an inferior quality.

The local F. F. A. chapter has worked out an effective plan by which the whole community may be benefited from the training received by the boys who are enrolled in the vocational agriculture department. This plan of community assistance was brought to the members of the department and the public as follows:

1. By discussions in the chapter meetings by different committees and other members of the organization.

2. By class demonstrations and field trips.

3. Weekly newspaper articles in local paper.

4. By appointing different student committees and reporting.

5. Selection of tools and equipment.

In order to insure confidence in the thoroughness of the work by the boys, it was necessary that the work be closely supervised by the instructor. Different shifts were organized to do the work after school hours and on Saturdays. Every boy was given an opportunity to take part in the community work.

The Board of Education with the superintendent's recommendations purchased for the department the necessary tools and the accessories for a barrel sprayer. A barrel sprayer and cart were borrowed from a retired farmer, who lives on the edge of town, at a very small charge of spraying about a dozen trees which are on his farm. A two-wheel trailer, which had been completed in the agricultural shops, was made suitable for transporting the spraying outfit from orchard to orchard.

The F. F. A. chapter voted to make a small charge to allow for the time spent

