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THE AGRICULTURAL EDUCATION MAGAZINE

Vocational Agricultural Building Landscaped by the Future Farmers of America, Colbert County High School, Leighton, Alabama

Annual Meeting (see page 83)
American Vocational Association
December 1 - 4, 1937
Agricultural Education Headquarters
Emerson Hotel, Baltimore, Maryland

The Agricultural Education Magazine

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CONTENTS

Editorial Comment

American Vocational Association Meeting

Baltimore, Maryland - - December 1 - 4, 1937

Theme:
"Vocational Education and Progress—American Style."

Agriculture Section Program
Headquarters—Emerson Hotel

RESEARCH SUB-SECTION
Wednesday, 1:30 p. m., December 1

Chairman: F. W. Lathrop, Research Specialists, Office of Education, Washington, D. C.
Dialogues on High Lights of New Studies.
"The Relative Significance of Occupational Opportunities Appropriate to the Establishment of Young Men in Farming." J. W. Hatch, Cornell University, Ithaca, New York, and J. H. Pearson, Office of Education, Washington, D. C.
"Problems of Vocational Agricultural Teachers in New Established Departments." M. B. Jordan and Roy Davenport, Louisiana State University, Baton Rouge, Louisiana.
"An Evaluation of Certain Factors That Influence the Occupational Choices of Rural Boys. A Ten Year Study." V. E. Nylin and A. M. Field, University of Minnesota, St. Paul, Minnesota.
"Factors Influencing Establishment in Farming of Former Students of Vocational Agriculture." R. W. Gregory, Office of Education, Washington, D. C., and R. M. Stewart, Cornell University, Ithaca, New York.

TEACHER-TRAINERS SUB-SECTION
Wednesday, 3:00 p. m., December 1

Topic: Procedures in Teacher Education.
Chairman: H. F. Cotterman, State Supervisor of Agricultural Education, College Park, Maryland.
"Procedures in Practice Teaching." Professor Carsie Hammonds, College of Education, University of Kentucky, Lexington, Kentucky.
Discussion: Led by Professor H. G. Kenestrick, Department of Agricultural Education, Ohio State University, Columbus, Ohio.
"Procedures for Providing Adequate Graduate Work for Teachers of Vocational Agriculture." Professor Roy L. Davenport, Director, School of Vocational Education, Louisiana State University, Baton Rouge, Louisiana.
Discussion: Led by Professor A. P. Davidson, Department of Education, Kansas State College, Manhattan, Kansas.

STATE SUPERVISORS SUB-SECTION
Wednesday, 3:00 p. m., December 1

Chairman: Walter S. Newman, State Supervisor of Agricultural Education, Richmond, Virginia.
"Building Community Programs of Vocational Agriculture." G. E. Freeman, State Supervisor of Vocational Agriculture, Nashville, Tennessee.
Discussion: Led by Ralph A. Howard, State Supervisor of Agricultural Education, Columbus, Ohio.
"Publicity Work for Vocational Agriculture." J. B. Perky, State Supervisor of Agricultural Education, Stillwater, Oklahoma.
Discussion: Led by Fred A. Smith, Vocational Agriculture Supervisor, Little Rock, Arkansas.

AGRICULTURAL EDUCATION MAGAZINE
Wednesday, 6:30 p. m., December 1

Business Meeting—Editing-Managing Board of the Agricultural Education Magazine, Emerson Hotel.

TEN-YEAR TEACHER-TRAINERS BREAKFAST
Thursday, 7:30 a. m., December 2

President: A. W. Nolan, Department of Agricultural Education, University of Illinois, Urbana, Illinois.
Secretary: C. S. Anderson, Department of Rural Education, Pensylvania State College, State College, Pennsylvania.
(By custom, program announced at the meeting)

GENERAL SESSION—FOR ALL FIELD OF

TOUR
Thursday, p. m., December 2

Tour for agricultural workers and friends to Washington, D. C. Detailed announcement later.

AGRICULTURAL EDUCATION SECTION
Friday, 9:00 a. m., December 3

Topic: "Making Farmer Classes Function."
Chairman: R. W. Gregory, Specialist in Part-Time and Evening Schools, Office of Education, Washington, D. C.
"Planning Continuing Programs of Agricultural Education in a Community." Professor H. M. Hamlin, Department of Vocational Education, Iowa State College, Ames, Iowa.
Discussions: "Planning and Supervising Programs of Instruction for Out-of-School Farm Youth." Russell B. Dickerson, Teacher of Vocational Agriculture, Sussex, New Jersey.
"Placement and Establishment." J. F. Potts, Teacher of Agriculture, Lincoln, Virginia.
"In-Service Training for Part-Time and Evening School Instructors in Vocational Agriculture." R. H. Woods, Director of Vocational Education, Frankfort, Kentucky.

Friday, 2:00 p. m., December 3

Topic: Looking Ahead.
Chairman: S. M. Jackson, State Supervisor of Agricultural Education, Baton Rouge, Louisiana.
"Plans for Using George-Deen Monies." (One speaker from each region, each to be allowed fifteen minutes.)
North Atlantic—John M. Lowe, State Supervisor of Agriculture, Charleston, West Virginia
Southern—J. F. Williams Jr., State Supervisor of Agriculture, Tallahassee, Florida
Central—J. L. Perrin, State Supervisor of Agriculture, Jefferson City, Missouri
Pacific—William Kerr, State Director and Supervisor of Agriculture, Boise, Idaho
Discussion: Led by H. C. Fetterolf, State Supervisor of Agriculture, Harrisburg, Pennsylvania
"Plans for Developing State-Wide Programs in Vocational Agriculture to Meet the Needs of the Respective States." Professor J. T. Wheeler, College of Education, University of Georgia, Athens, Georgia.
Discussion: Led by R. L. Hahn, State Supervisor of Agricultural Education, Hartford, Connecticut.

AGRICULTURAL EDUCATION SECTION
Saturday, 9:00 a. m., December 4

Chairman: R. M. Stewart, Department of Rural Education, Cornell University, Ithaca, New York.
Report of Research Committee, Agriculture Section. R. M. Stewart, Cornell University, Ithaca, New York.
Recent Studies in Vocational Agriculture, F. W. Lathrop, Office of Education, Washington, D. C.
A State Program of Research in Agricultural Education. W. G. Crandall, A. and M. College, Clemson College, South Carolina.
The Agricultural Education Magazine, Roy A. Olney, Editor, Morgantown, West Virginia; W. F. Stewart, Business Manager, Columbus, Ohio.
Business Meeting.

AGRICULTURE TEACHERS' SUB-SECTION
Friday, 2:00 p. m., December 3

Chairman: Joseph I. Stubbs, President, Pennsylvania Association of Teachers of Vocational Agriculture, Jersey Shore, Pennsylvania.
"The Value of Adult Evening Schools." John W. Goodman, Instructor of Vocational Agriculture, Vocational School, Minotola, New Jersey.
"Conducting Evening School Classes." Wayne B. Rentschler, Supervisor of Vocational Agriculture, West Lampeter Township High School, Lampeter, Pennsylvania.
"Difficulties and Dangers in Adult Education in Agriculture." Floyd Barnhart, President, Missouri Vocational Agriculture Teachers Association, Caruthersville, Missouri.
"Ten Timely Tips to Teachers." Dr. C. S. Anderson, Professor of Agricultural Education, Pennsylvania State College, State College, Pennsylvania.

A. K. GETMAN

Professional

R. W. GREGORY

Apprenticeship Training in Teacher Education

JOHN T. WHEELER, Teacher-Training,
Athens, Georgia

John T. Wheeler

SINCE 1928 the department of agricultural teacher-training of the University of Georgia has required of all its students, who are preparing to teach vocational agriculture, a full quarter or twelve weeks of supervised practice under conditions of normal teaching responsibility. This term of practice teaching is called apprenticeship practice and is provided entirely off the campus.

Theoretically, apprenticeship schools may be located anywhere in the state. This tends to make the program elastic and adaptable. In practice, however, it is necessary to keep apprentice schools grouped about convenient centers for effective and economical supervision. Our state in its present development of vocational education in agriculture, offers four groups of schools for training centers: one in the northeastern part of the state; one in the southeastern part; one in the southwestern part; and one in schools of the northwestern area.

Organization of Apprenticeship Practice

There are five rather definite steps we have pursued in setting up the apprenticeship work in any community or school:

1. Early in the fall the supervisor and teacher-trainer go together in each case to the county superintendent and the county board of education, and carefully explain the apprenticeship practice plan to these school authorities. If they wish to co-operate with the University of Georgia in the training of agricultural teachers, a study of the agricultural departments of the county in question is made. This study reveals the status of the school situation in general, and the status of the vocational program in particular. It also reveals the opportunities for expanding the all-day, day-unit, part-time, and adult classes.

In selecting schools, we consider the tenure of both the department and the teacher very important matters. This year we selected only those schools where the department of agriculture had been established for five or more years. We took such other evidence as indicated success of the department and co-operation of such school officials and the community.

The tenure of the vocational teacher is emphasized in selecting the practice had been in that school for four or more consecutive years.

2. When a central school has been selected, a visit is made by the state supervisor and teacher-trainer in company with the county superintendent to the local school authorities, and definite arrangements made for taking apprentices into the school as faculty members with outside assignments under the county board. Assignments at the central school range all the way from observing and assisting in all-day classes in agriculture to conducting chapel exercises; the outside assignments in every case include organizing and teaching a day-unit class for the entire apprenticeship period in an adjoining community, and conducting at least one evening class in the same community.

3. When the day-unit and evening class centers are arranged for, specific agreements are made with the proper authorities in both the central and outlying schools for the apprentice's work during the winter. Apprentices are recommended to, and employed by, the central schools in accordance with this agreement, and placed on the job in the same manner as regular teachers.

4. Apprentices were all placed this year by the first of November, and they began working up teaching units for their winter's assignments as responsible teachers and members of the teaching staff of a county or a local high school.

Perhaps it should be noted here that the seniors assigned to apprenticeship work have had observation and some practice in connection with special methods courses. This observation and practice is obtained in campus practice schools.

5. It has been found advantageous for two apprentices to be placed in each central school.

Financing Apprenticeship Practice

Apprentices get no compensation for the practice period in terms of salary. They pay their regular term fees at the University of Georgia, and furnish their own board and room. However, there is provided $25 per month per trainee to defray community travel expenses incurred in the practice program. Of this amount the local or county board puts up $12.50 and the University of Georgia puts up $12.50. This money is paid directly to the supervising vocational teacher.

The most common way of providing travel for the apprentices is for the local vocational teacher to provide a used car to be driven by two apprentices. The cost of the gas and oil is paid by the vocational teacher.

practice, are placed on the teacher-training staff for three months' practice period at a time. Any money going to the vocational teacher from teacher-training funds, therefore, goes to him as salary from the University of Georgia treasurer.

Supervision of Apprentices

Supervision of apprenticeship practice is provided in the following ways:

1. It will be apparent that much can be done during the fall term by each apprentice in preparation of his winter's work: community studies of the agricultural, human, and educational resources of his county and community can be made.

Provisions are made during the fall term for the trainee to make such contacts with actual conditions in the local situation to which he is going as his problem may demand. Provisions are also made for follow-up supervision during the spring term following the apprenticeship period.

2. In selecting both the central apprenticeship school and the local day-unit and evening class schools, the teacher-training department takes the responsibility for finding or making conditions favorable to successful teaching. Still the trainee is given a free hand in discovering, thru a study of the situation, such conditions as need attention in this regard.

3. During the apprenticeship training period, the local vocational teachers at the central school become the supervising teachers and, as indicated above, become members of the teacher-training staff. These men, together with the local superintendents, come together several times during the fall to study the apprenticeship plan of work and discuss problems involved in supervising and carrying out the training scheme. Thru understanding developed in this way, much supervisory assistance in inaugurating and carrying on the work is obtained. These conferences are continued thruout the apprenticeship period as the situation may demand.

4. After the apprentices are at work on the job, group conferences of these men, together with the local vocational teachers, are held. These conferences afford an opportunity for pooling experiences. Saturday conferences are proving highly beneficial alike to the novices, those in charge of the local schools, and the supervisors of the entire program.

5. At the beginning of each apprenticeship period the teacher-trainer in charge of the program makes a supervisory visit to each trainee each week, and thruout the training period as the need seems to warrant.

6. During the pre-employment training period, each trainee accumulates a professional and technical library that he takes with him into the field for continued study and reference.

In brief, this plan for supervising

placing the student in typical, but carefully selected schools where he may get his practice under normal conditions of the teaching situations he will later meet; (3) supervising the activities of the student to see that during his practice period he gets in touch with the total range of the activities of a teacher of agriculture, and that he uses approved methods in dealing with these activities; (4) encouraging the student to establish good study habits on the job in dealing with his problems.

Activities of Apprentices

Apprentices carry on all the typical activities demanded by the state program of vocational education in agriculture. They make surveys of farms and use these data in selecting and setting up teaching units appropriate to the special situations and involving aspects of the farming type as a whole. These teaching units include: (1) project practice, (2) other supervised practice, (3) sequence of jobs and problems arranged for study (teaching), and, materials to be used in solving the problems found. Teaching units are developed for both boys and adult farmers.

After working for a week or more as an observer and assistant teacher, the apprentice begins to try his hand at "directing teaching." He begins with the classes already organized and works toward the organization of classes of his own in outlying schools.

Special emphasis is given to project development and supervision as a method of teaching. Transportation is furnished to make this activity sure and adequate.

All aspects of the Future Farmers of America work are entered into by the trainees. They serve as chapter advisers and at other stations in the absence of the chapter officers. They also help to plan and carry out the program of Future Farmers of America activities that have been developed by and for the local chapter.

All official records are kept by the trainees at the practice school. These records range from class records to project record keeping. They assist with the total annual report to the state office. Here they have an opportunity to check on the adequacy of the records that are being kept.

Community activities of a wide range are carried on by the trainees—from working in the church and Sunday School to agricultural service jobs for farmers.

Beyond the teaching activities in the school, apprentices are called upon as are other teachers to assist with chapel, or to meet emergencies arising in the school. They are also called upon, as are other teachers, to assist with social and recreational activities of the school.

University Schedule Involved

Of course the university schedules of apprentices are involved in making arrangements to "off campus" training. We are working under a four quarter system at the University of Georgia and this makes for good schedule adaptations. At the beginning of the junior year or earlier, the student comes to the teacher-training department and works

education. This schedule indicates the courses by quarters for the entire training program, including the quarter for apprenticeship practice. This obviates any misunderstandings with either the university administration or the students.

This is a brief review of the program for teaching practice that has been in operation for nine years at the University of Georgia. It has steadily grown in favor with all concerned in our state, and has met with very favorable comment from those who have come to us to study its operation.

E. B. MATTHEW,
State Director of Vocational Education,
Little Rock, Arkansas

Vice-President, Agriculture Section,
American Vocational Association

Tennessee's Master Teacher

G. E. FREEMAN, State Supervisor,
Knoxville, Tennessee

C. T. Pardue

MR. C. T. PARDUE, teacher of vocational Agriculture, Grove High School, Paris, Tennessee, as a result of his outstanding achievements with farmers and farm boys, and his valuable contributions as a citizen, was declared "Master Teacher" of Vocational Agriculture for Tennessee for 1936.

Mr. Pardue has taught vocational agriculture continuously at Paris since 1924. His high school class enrollment increased from 24 boys in 1924 to 72

Teaching Agriculture in a Small School

JOSEPH D. RYBURN, Teacher,
Stewartstown, Pennsylvania

PENNSYLVANIA has many high schools whose total enrollment ranges between 75 and 125 pupils. These schools are serving rural areas and, naturally, it is here that departments of agriculture are most effectively established. Vocational agriculture is being made available to more and more of these rural communities each year. The success of the work in each community depends, in part, upon the sincerity of the community's desire for such training for its rural boys; but it also depends largely upon the ability of the teacher of agriculture to adapt himself readily to the community and the demands the community may make upon his time and talents. May it be said here, that the small rural community is in a class by itself when we consider the opportunities it offers the teacher of agriculture to prove his ability to serve. Teacher-trainers must feel the great responsibility that rests upon their shoulders in the selection and training of prospective teachers for service in the many different types of communities common to Pennsylvania.

Because Pennsylvania communities do differ in so many ways, a teacher considering a prospective position has many things to consider other than the probable salary he may receive. If he is wise, he will ask himself such questions as these: Among what nationality of folk am I most likely to do the best work? Am I sufficiently familiar with the types of farming common to this community? Am I accustomed to hill farming or do I belong in the gently-rolling country? Will my religious beliefs fit this community? Can I secure and use to advantage the co-operation of existing community organizations and industries? Who has gone before—can I fill "the shoes" left for me? Will an active F. F. A. organization be possible in this community and have I the ability to develop such an organization? Will this community give me opportunity to make the best use of the skills which are my specialities? Am I prepared to live a happy, active, home and community life?

Such are some of the questions which should be answered satisfactorily in the teacher's mind before he accepts a teaching position. Why do we stress these points? Because they constitute the foundation upon which the teacher of agriculture must build if he hopes for success. These points presuppose home background and school training sufficient to satisfy the most exacting demands of the chosen community. However, this does not mean that the teacher of agriculture, to be successful, must represent the height of perfection in his profession. Nevertheless, it does mean that he has a bigger life's work ahead of him than he has any reason to suspect when he graduates from college.

What does Pennsylvania ask of her teachers of agriculture? The teacher of agriculture in the small rural high school has no helper. He must be prepared to teach any and all of the follow-

A. M. FIELD

Methods

Classroom Preparation for Farming

J. P. GREEN, Teacher,
Corning, New York

NEARLY 6,000 Future Farmers meet daily in about 250 vocational agriculture departments in the high schools of New York state. A typical Future Farmer enrolls for the agriculture course in each of his four years in high school. His ambition in taking this course is to prepare himself for the occupation of farming. The duty of the agriculture teacher and school is to help this farm boy gain this preparation. How can he best be taught to farm? Twenty years ago the answer would have been: "Place him on a farm and let him learn from experiences of himself, his father, and his neighbors." What is the answer today after 19 years of high school agriculture? I think it has changed little. It is my belief that the best textbook on dairying is the cow, the best textbook on poultry raising is the hen, and the best textbook on farming is the farm.

Therefore, the successful agriculture course in your high school must use this best text—the farm. How can the farm be brought into the classroom? That is the question which I will try to answer. First of all, a boy is not usually permitted to enter a class in agriculture unless he lives on a farm. Therefore he brings to the classroom a certain amount of farm experience and has a home farm upon which he may make observations and studies. Upon entering the class the boy is provided with a guidebook in which he records information concerning his farm. He takes an inventory showing the value of all the property owned for farming purposes and the debts against it. He prepares a list of the expenses and receipts for the past year and figures the labor income and profit for the farm. He analyzes this farm business studying its size, its balance, the use of labor, the production of animals, and yields of crops. These studies give him and his teacher a fairly accurate picture of his farm. He compares this farm with other farms of his community and looks for points of weakness and strength in the organization and management of his farm. Finding weaknesses he prepares a program for improving this home farm business thru projects which he may undertake with the approval and co-operation of his parents and the guidance of his teacher.

Thus, Howard Irving finds during his studies at school and at home that his inventory shows farming capital of $6,000 and debts amounting to $2,000, giving a net worth of $4,000. He finds $1,800 receipts and $1,200 expenses giving $600 as labor income or wages for the family. He learns that his 10 cows average 5,000 pounds of milk while the community average is 6,000, that his hens produce 150 eggs per hen while the community average is 120, that his to him even tho he has always lived on this farm. He is now able to bring his farm and its problems into the classroom. After studying this farm and other farms of his classmates and community he prepares his plan for improving his farm business. He concludes that by the time he becomes a full-time partner with his father upon completion of his education, their dairy herd should be increased from 10 to 15 cows and that milk production should be increased from 5,000 to 7,000 pounds of milk per cow. He sees the necessity of increasing crop yields to feed the additional livestock. He wishes to increase the acreage of potatoes from three to five acres and the number of hens from 200 to 500. He records these goals to be reached in a five year period and decides what should be done year by year to reach these results. The result is a farm improvement program including such activities as keeping cow testing records on the dairy herd, purchasing a purebred herd sire, raising good heifer calves, starting a field of alfalfa, improving pasture, eradicating disease in the dairy herd, and developing a market for high quality eggs. We can see at a glance that this boy is not only preparing to farm but is actually farming. Thru his agriculture course, he is facing the problems which are a part of farming as an occupation in his community.

The agriculture teacher carefully studies the problems faced by his students and other farmers of the community. He makes these problems the basis of his course of study and brings into his classroom the best known materials, methods, and activities for solving these problems. Let us visit that classroom. We find twenty or more husky lads who have done the morning milking, fed the hens, or planted potatoes before catching the school bus. Each boy brings to class his home farm and its problems—in his mind and in his notebook. This notebook holds the information he has collected concerning his farm and his community. The teacher presents a problem which is common to the farms of these boys. Probably the most commonly used method of solving these farming problems is that of informal discussion in which these boys exchange their knowledge gained by experience and study at home and at school. It is the same discussion method that farmers have always used in solving their problems as they meet in the Grange, at the creamery, at threshing time, or at the farm auction. To make the discussion of the school classroom a complete and reliable method of solving a problem many outside sources of information must be used.

The well-equipped classroom contains many agricultural bulletins. It has agricultural textbooks, farm magazines, charts and pictures; samples of feeds, seeds, fertilizers; and the catalogs of reliable livestock breeders and dealers of farm supplies. A bulletin board keeps up-to-date information before the class a successful farmer or farm leader is brought into the classroom to speak to the boys from his background of experience.

A well-equipped school shop helps the boys solve many mechanical problems such as sharpening the saw, cutting rafters, building a feed hopper, or timing the gas engine. The class period is often used for testing milk for butterfat, testing soil for lime, planning a school order of crop seeds or plants, or keeping accounts on the home farm business. Many times the class is taken on a field trip to a farm for such problems as setting forest trees, culling hens, adjusting a plow, judging cows, or rearranging the dairy stable. On other occasions, trips are made to one of the six state schools of agriculture, to the Geneva Experiment Station, to fairs for exhibiting and judging farm livestock and crops, and to Farm and Home Week at the state college.

The thought I wish to leave with you, is that in the training of Future Farmers we are trying to use every possible method of bringing into the classroom the home farms of the students and that the problems of these student farms become the basis of the course of study. Thru the solution of these problems in the classroom we hope the boy will acquire correct habits of thinking and business judgement in managing a farm. While we use reference books and many other materials in helping solve these problems, we believe that the basic textbook is the farm, and that while Old Betsy is seldom seen in the classroom, her spirit is always there, for the best textbook on dairying is the cow.

A Community Wide Livestock Census

J. Kleinheksel, Instructor,
Tecumseh, Michigan

MAKING a livestock census is not new, but getting paid for the information by a milling company makes this type of work a worth-while Future Farmer project. I know that every F. F. A. can use plenty of cash.

In setting up this project, we encountered certain difficulties which I wish to discuss in this item. When I first discussed this matter with Mr. Perry Hayden, president of the William Hayden Milling Company, we decided that we should divide the F. F. A. Chapter into four teams, each team to choose a captain. The leading team was to receive five cents for every farmer contacted, the captain to receive one cent extra for being captain, while the F. F. A. was to receive five cents for every farmer contacted.

After one week of work we discovered our mistake. The captains were not working. Some of the boys under him had done all the work. I decided that a change must be made. After a discussion

who contacted the greatest number of farmers seven and one-half cents would be paid for his own use. The second highest boy would receive five cents, the third highest two and one-half cents, and the fourth, fifth, and sixth would receive one cent each for every farmer contacted. The work was renewed with new vigor. After two weeks of work the contest closed. The results were very satisfying. The total number of farmers contacted by the 22 members was 662, making a total check of $33.10 for the F. F. A. The winning boy contacted 126 farmers, the second highest 100 farmers, the third 80, the fourth 58, the fifth 55, and the sixth 48 farmers. These six boys were given a chicken dinner by the Milling Company and taken to the studio for a picture.

The question may be asked: How much usable information can be obtained from a project of this kind? I feel that it is a help in the study of farm management because we have first-hand information on the number of horses, cows, beef steers, hogs, sheep, chickens, and turkeys found on farms within a 10 miles radius of town. It also gave the boys a chance to meet farmers and see farms that they otherwise, never would have visited. And, it added money to our F. F. A. treasury, which will be used in making a trip to our national capitol next summer.

I feel that this sort of project is worth while passing on to other high school instructors who may find this project workable in their own communities.

Valuable Teaching Material From Dairy Records

H. J. SHOUP, Teacher,
Little Valley, New York

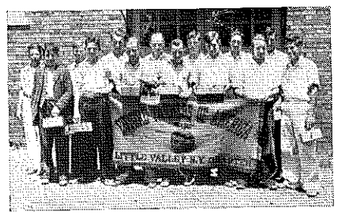
DAIRY herd improvement records are one of the most valuable things to be taught to the farm boy in a dairy section. What single work can bring out more important lessons? There is no other single supplementary project that combines and makes practical so much other dairy information.

1. Milk testing must be taught
2. Proper feeding of individual cows
3. Culling of dairy cows
4. Seasonal variation of milk and its price
5. Breeding and replacements.

Every dairy boy should learn to test milk, but dairy improvement means testing every month of the year, recording the test, weighing the milk, and determining the amount of milk and butterfat for the month. Proper feeding is more easily taught as the boy weighs the grain, the hay, silage, and other feeds.

Little Valley Future Farmers test each year and keep records as part of their supplementary practice. At the New York State Fair a contest is conducted yearly to determine which chapter has best completed their records and used them most successfully.

Little Valley boys have been testing milk for ten years, and each year something new can be learned. This past year vidual cows' records were complete a monthly summary was made by each boy for his home herd.



Ready to Take Test

This summary was placed on the blackboard and contained the following information in column form:

The boys name, the breed of cattle, the number of dairy cows, the number of dry cows, and the number disposed of during the month. The herd summary of the total milk and butterfat was recorded from the individual cows' records. The total milk was divided into the total butterfat to secure the average test. The total number of cows was divided into the total milk and total butterfat to get the average milk and butterfat for the month.

These averages were discussed each month to see the value of fall freshing, the feeding of grain, the difference in

cords the number of cows giving over 40 pounds of butterfat, known as the honor roll cows.

Other columns contained the name of the highest milk cow and her record and the name of the highest butterfat cow and her record. This all gave interesting data which was used for comparison.

Other data recorded was the total grain, its cost, and the pounds of grain per 100 pounds of milk fed. All was extremely valuable in teaching proper feeding methods. The price of milk secured from the Dairyman's League was recorded each month; thus the boys were able to study the seasonal variation in milk prices. The last two columns contained the value of the milk for the month and the value of milk over grain cost. Here again it was shown that the herd fed the proper grain returned the largest profit, as it was generally culled of its poor cows and those kept properly fed.

At the end of the year each individual cow's record was summarized. A graph was made showing the relation of milk to grain fed. The feed cost of producing 100 pounds of milk was determined, and profit over feed for each cow calculated.

The monthly summary was copied by the student and teacher, mathematical errors were more easily noticed on the blackboard, and the teacher each month had a means of checking to see that the

Making Good Use of Farm Papers and Magazines

VIRGIL A. TELFER, Teacher,
Martinsville, Indiana

IT HAS been my observation for some time that relatively few students of vocational agriculture really appreciate the value of farm publications.

I believe we have completely changed that feeling in this department. The boys now seem eager to get hold of the eight or ten weekly and monthly publications we are getting and pass on to each other worth-while ideas they read.

Several years ago, I followed the very simple practice of merely putting the magazines on the rack and letting the boys "help themselves," so to speak. They read the jokes and looked at the pictures, but that was about all. Next I tried reading all the good articles myself and listing each on a bulletin board along with the date, page, title, and author. I soon found I would have to devote most of my own time as a "proof" reader and the boys did not altogether appreciate my effort.

During the past two years, we have worked out a system which is giving excellent results and the boys like it.

Once each month, each student gives a class report before the group on one or more articles from recent farm papers. The class has worked out a system of judging and grading each other. A minimum time limit is set and each speaker is allowed two minutes more than this minimum, and is penalized so many points for each minute violation.

Three students, alternating with each speaker, have charge of these sessions—a chairman to announce the subject and speaker, a time keeper, and a prosecutor to cross examine the speaker at the close of each talk. The score card below is used by each member to rate the talks:

The following things are accomplished by using this or a similar method:

1. Encourages reading more and better educational farm articles
2. Gives everyone an opportunity to preside over and have a part in each session
3. Gives each student the benefit of more articles than he would otherwise get
4. Gives good training in appearing before others and in self-expression.

Student	English	Voice	Posture	Attitude	Knowledge of Subject	Class Discussion	Use of Black Board	Interest of Subject	Reference	Time	Total Score
	20	10	5	10	10	10	10	10	5	10	100
Gene.....	18	10	5	10	6	4	8	10	5	10	86
Etc.	..	..	..	..	..	..	..	..	..	..	..

Supervised Practice

H. H. GIBSON

What Progress Has Been Made in Planning Supervised Farming?

H. W. SANDERS, Teacher-Training,
Blacksburg, Virginia

H. W. Sanders

THERE is a germ of truth in the old saying that "When the Lord wants to make an oak tree he takes a lifetime, but when he wants to make a squash he does the job in six weeks;" suggestive of the progress that has been made in planning supervised practice or supervised farming. The tender plant that has been nurtured thru a period of 20 years, despite some defective practices in its culture, is developing into a sturdy plant, its roots striking more deeply into a well-tilled soil and its branches spreading in the sunlight of the enlarged area required for its normal growth. The tree is not yet mature and substantial growth may be expected in the future, but it is fitting at this time to check upon the development that has been made and note the degree of progress.

No attempt is made here to discuss all the various phases of progress that have taken place in this part of the program of vocational education in agriculture. Instead, the discussion will be limited to two particular points that will embrace many others thru their various implications. These are: (1) the changing attitude toward planning supervised farming and (2) the definite trend toward long-time planning with the specific aim of enabling the boy or young man to become established in the farming business. It will be noted that the term "supervised farming" is preferred to "supervised practice" as it seems to be more expressive of the aims and ideals that are becoming generally recognized. True, the boy's supervised practice program consisting chiefly of production enterprises, improvement projects, and supplementary farm jobs, may fall far short of the ideal of a farming program, but it represents, or should represent, at least a small scale farming program for the individual engaged in it. Certainly this would be true when the complete program for four or more years is considered even if it were not true of the program for a single year.

As someone expressed it, "the tail that formerly wagged the dog has now become the dog itself." This is another way of saying that the attitude of teachers of agriculture, with respect to planning programs of supervised farming, has materially changed. A few of our readers will remember the time when "projects" or enterprises were tacked on to the program as a necessary evil. In many cases there was little or no correlation between them and the formal courses taught in the classroom. Boys took what they could regardless of what they should. As a result the class work often failed to function on the farm and the farm work was a repetition of enterprises, not necessarily adapted to the boy's needs and frequently of little educational value. The reversal of this attitude marked one of the most forward steps in the teaching of vocational agriculture. When the supervised farming program of the boy became the center of interest and the basis of class instruction, several desirable tendencies were noted. Among them were an enlarged scope of enterprises, an increase in the number and variety of enterprises, and a functioning body of subject matter that was reflected in increased pupil interest, larger returns, and better farming. Another outgrowth of this changed attitude was the development of individualized instruction which, under favorable circumstances, has usually resulted in a strengthening of the instruction as well as of the supervised farming program.

In Virginia the planning and organizing of the supervised farming program has developed along two rather distinct lines. The first of these is based on the principle that a boy should be trained for a specific type of farming and is adapted to sections in which there is a variety of distinct farming types such as general, dairying, beef cattle, grain, and orchard. A boy in Carroll County, who wishes to develop ability to operate a general farm in his community, first lists the major and minor enterprises needed in that type. These are grouped by years into what is called an ideal program—a set-up representing the optimum combination of enterprises to provide the necessary training during the four years. In some cases this is extended to five or six years. Such an ideal program is then revised to fit the individual needs and opportunities of the boy, thus becoming the actual or practical program. The comparison between the two is readily seen in Table I.

Among the advantages of the actual program may be included the following:

1. A maximum of training opportunity is given.

TABLE I—Farming Type: General. Carroll County, Virginia.

I. Ideal Training Program:

I	II	III	IV
Corn	Wheat	Hay	Pasture
Turkeys	Dairy calves	Dairy heifers	Dairy cows
Pigs for pork	Corn—(silage)	Beef feeders	Beef feeders
Cabbage	Turkeys	Baby chicks	Laying hens
	Breeding gilt	Sow and litter	Sow—2 litters
	Tomatoes	Breeding sheep	Breeding sheep
		Beans	Onions
		Buckwheat	Barley
			Home garden
	Supplementary Farm Jobs		
Seeding oats	Pruning apple trees	Feeding work stock	Care of mare at foaling
Harvesting oats	Preparing spray schedule	Cultivating orchard	Planning home garden
Making farm gates	Fitting farm tools	Building brush dams	Planting shrubs
			Planting forest trees
			Keeping farm accounts

II. Actual Training Program:

I	II	III	IV
3 acres corn	3 acres wheat	3 acres hay	3 acres pasture
4 pigs—pork	2 dairy calves	2 dairy heifers	2 dairy cows
¼ acre cabbage	3 turkey hens (30 poults)	100 baby chicks	1 dairy calf
	¼ acre tomatoes	2 beef feeders	40 laying hens
		¼ acre bird eye beans	1 sow and litter
			20 breeding sheep
			¼ acre onions
	Supplementary Farm Jobs		
I	II	III	IV
Seeding oats—4 acres	Pruning 60 apple trees	Feeding work stock—3 head	Planning home garden—½ acre
Building 1 farm gate	Fitting farm tools	Cultivating orchard	Planting shrubs
			Keeping farm

2. The major enterprises and a large number of the minor ones are included.
3. A rotation is followed (corn, wheat, hay, pasture).
4. Balance is fairly well maintained in any given year.
5. The boy grows into a farming business.

The second type of long-time program is similar to the example given. There are enough differences, however, to justify an illustration. Under the leadership of T. V. Downing, District Supervisor in Eastern Virginia, a "standard farming program" has been developed. This was done in a conference of the teachers who were working under similar farming conditions. Local agricultural leaders also helped. The boy who wants to become a poultry farmer has the following standard established for him: Size of farm, 50 acres

500 hens	20 acres small grain
1,500 chicks	10 acres corn
4 fat hogs	5 acres hay
4 horses	1 acre home garden
	1 acre home orchard

Similar standards are set up for other farming types, the best farm management practices for the area being kept in mind. Selection of the farming type automatically determines the basic or "yardstick program," as it is called, that the boy will carry. Acceptable substitutions may be made to fit the home needs but, in the main, the boy knows in a rather definite way what will be expected of him before he starts his training program. In addition to the regular enterprises supplementary farm jobs, F. F. A. activities, farm shop, and supplementary enterprises are added to the program in each year, and relative values assigned to each group on the basis of 1,000 points for each year's work. Usually the allotted points are divided equally between planning and doing or execution of plans, tho this is not always the case. In Table II the following is given as a typical example:

It will be seen that the boy who completes four years of vocational agriculture has made a long stride toward attaining the standard set up. As one teacher expressed it, "He has made a toe-hold that may enable him to establish a foot-hold in the business of farming."

Out of the development of the four-year program has grown a need for more careful planning of the division of jobs for each enterprise on the same long-time basis. Some enterprises may be satisfactorily handled in one year, but others may require from two to four years. This is particularly true of those in which the boy wishes to become established at the end of his school career. How to avoid monotony, maintain interest, and provide a maximum of participation in new experiences, have constituted no small problem to the thoughtful teacher. How, for example, can the baby chick enterprise be justified over a four year period in the yardstick program previously cited? One of the best answers to this question has been furnished by J. J. Gwaltney, teacher of agriculture in Greensville County, Virginia. His four year plan for the baby chick enterprise illustrates the way in which the troublesome problem may be handled.

Enterprise: Baby Chicks
Jobs to Study

First Year

1. Constructing brooder house.
2. Selecting brooding system and brooder.
3. Securing brooder equipment.
4. Choosing the breed of chicks.
5. Keeping records and accounts.
6. Securing chicks.
7. Constructing a brick brooder.
8. Preparing a brick brooder.
9. Brooding chicks.
10. Controlling diseases.
11. Securing feed.
12. Feeding chicks from one day to four weeks old.
13. Feeding chicks from 4 weeks old until the cockerels are sold.
14. Feed and care of chicks during April.
15. Providing green feed for chicks.
16. Flock management—culling, separating sexes, providing roosts.
17. Preparing cockerels and scrub pullets for market.
18. Marketing cockerels and scrub pullets.
19. Analyzing records.

Second Year

1. Repair, clean, and disinfect brooder house.
2. Secure chicks. Study results secured in the community by poultrymen who have bought chicks in the past from different hatcheries. Study the different diseases transmitted thru egg and chick.
3. Securing feed and feeding baby chicks for the first 4 weeks. Necessity for certain ingredients in feed such as cod liver oil, powdered milk, etc. Cost and comparative value of different brands of starting mash. Methods of feeding and watering.
4. Make plans for sanitation, spraying, disinfecting. How often to clean house. What to use for litter. Study diseases that are likely to occur due to poor sanitation.
5. Study diseased chicks (conduct post-mortem) and make plans for control.
6. Securing feed, feeding and caring for chicks from 4 weeks old until the cockerels are sold.
7. Keeping brooder house clean and sanitary.
8. Feeding and care of chicks in April.
9. Separate cockerels from pullets, prepare for market.
10. Marketing cockerels and cull pullets.
11. Close baby chick enterprise, summarize, analyze and interpret records.

Third Year

1. Determining scope of enterprise. Study outlook from U. S. D. A. on eggs during coming year, as guide in helping to determine number of baby chicks to buy for layers.
2. Securing baby chicks. Review plans made last year. Study results secured in community this past year on chicks secured from various hatcheries. Whether to buy chicks whose sex had been determined. How to determine sex. Study plans of State Department of Agriculture to improve quality of chicks. Procedure to take if chicks are not as represented.
3. Securing feed, care, brooding, sanitation and feeding chicks for first four weeks.
4. Securing feed, care, brooding, sanitation and feeding chicks from four weeks until cockerels are sold.
5. Make detailed study of diseases, parasites, and vices of baby chicks observed in the community showing how disease is transmitted—the various stages and how controlled.
6. Preparing cockerels and scrub pullets for market. Review plans and results of previous years.
7. Market cockerels and scrub pullets. Review plans and study results of previous year. Investigate new markets.
8 Care and management of chicks.
9. Close baby chick enterprise.
10. Selecting best strain of the breed for layers.
11. Securing eggs or chicks to be used as foundation flock of the strain selected.

TABLE II *The Yardstick Program*

First Year

	Points
100 baby chicks	200
30 pullets	100
1 acre corn	150
½ acre cover crop	150
Supplementary farm jobs	125
Farm shop	200
F. F. A. activities	75
	1,000

Second Year

	Points
25 laying hens	200
200 baby chicks	150
60 pullets	100
2 acres corn	100
1 acre cover crop	100
Supplementary farm jobs	100
Farm shop	150
F. F. A. activities	50
1 Supplementary enterprise	50
	1,000

Third Year

	Points
75 hens	150
300 chicks	100
100 pullets	100
3 acres corn	50
1 acre cover crop	100
1 gilt	150
Supplementary farm jobs	100
Farm shop	100
F. F. A. activities	50
2 supplementary enterprises	100
	1,000

Fourth Year

	Points
125 hens	100
400 chicks	100
125 pullets	100
4 acres corn	50
1 acre cover crop	100
1 sow and litter	150
4 fat hogs	150
Supplementary farm jobs	50
Farm shop	100
F. F. A. activities	50
2 Supplementary enterprises	50
	1,000

Objectives in Part-Time Education

H. M. HAMLIN, Iowa State College

THE objectives of part-time education depend upon the group to be served. Three rather distinct types of groups can be designated:

1. There are those who have taken vocational agriculture in the high school and who are continuing in a basic program of farmer-training extending from the first or second year of the high school until several years after high-school graduation. It is to be hoped and expected that the numbers in this group will increased rapidly until all of us come to consider that no program of vocational education in agriculture is complete that is confined to high-school instruction. For this group such objectives as the following might prevail:

(a) To carry to the "ability" or "doing" level all instruction begun in the high school which could not be carried that far with less mature students.

(b) To emphasize the abilities involved in managing an entire farm in contrast with the abilities involved in managing projects and enterprises which have been dominant during the high-school period.

(c) To utilize the growing interest of young men in the broader problems of agriculture as a means of preparing them to solve these problems thru co-operative action with their fellow farmers and others.

(d) To assist in founding and maintaining attractive farm homes and in initiating in these homes ideals and practices conducive to happy country living.

(e) To continue the general education begun in the high school.

2. There are those in communities which have recently established departments of vocational agriculture who are past the age of high school attendance but have received no systematic instruction in agriculture. Now, and for many years to come, there will be many communities of this type. They are ideal centers for a certain type of part-time instruction. In such situations the whole job of providing basic training for agricultural occupations remains to be done. The usual high-school program must be telescoped with the program outlined for Group 1 in caring for the need of the young men reached.

3. There are those in communities which have had high-school courses in agriculture for an extended period but which have had no part-time classes. In situations like this there are often boys of high-school age who are not in the high school and boys past high-school age who have not taken vocational agriculture in the high school. These can be combined in one group or may preferably be taught separately. In teaching groups like this it is commonly necessary to try to make up to these boys and young men what they miss in thru failure to attend high school and, in addition, to do for them some of the things which would be done for Group 1 thru post-graduate courses.

Any discussion of objectives ought to emphasize the fact that the set-up for part-time education in agriculture admits of and encourages the use of federal funds for general education, provided a central core of vocational education is provided. The provisions for part-time education are the most liberal of all the provisions of the federal vocational-education acts. Much more use should have been made of them.

Our discussion thus far has been in terms of student objectives. What can the teacher of a part-time class hope to gain as a result of good work with part-time classes?

1. He extends greatly his usefulness in the community thru increasing decidedly the numbers he reaches.

2. He does a much more thoro job of farmer-training because he continues it longer in the case of each individual boy and he deals with those mature enough to learn even the more difficult things he has to teach.

3. He wins community support by guiding young men thru the most crucial years in their careers.

4. He secures more tangible evidence of his work because young men are better able to carry out the new practices in which they believe than are boys of high-school age.

5. He is able to work with an age-group nearer his age than any others. Because of this he is likely to have a more sympathetic understanding of them than of any other group with whom he works.

6. If he has been doing evening-school work, he becomes able to divide the adult group he has been teaching into younger and older adults. This overcomes some of the difficulties in adapting teaching to persons of widely varying ages. It may be useful in reducing class size. It certainly makes it possible to make a better appeal to the younger men; it is well known that classes including older farmers are not well attended by young farmers.

If any other arrangement can be made, the teacher of agriculture should not try to manage a part-time class alone. The interests of these young people are numerous and diverse. If the current teacher of agriculture has taught them when they were in high school, his teaching alone will usually not provide the novelty needed for an interesting part-time class. Other high-school teachers, special teachers, other adults from the community, extension agents, and specialists may be drawn upon to supplement the efforts of the teacher of agriculture. States having farm schools for young people, such as Wisconsin's Folk School, may use these schools for some of their local teaching facilities.

Since attendance is voluntary, instruction must center about the felt needs and interests of those taught. A number of studies are available which indicate in a general way what these needs and interests are. With these for a background, the teacher gets his local orientation from a council of part-time students. The objectives of part-time education are set up finally by those to be taught. However much we may theorize about objectives, if we cannot get our lists of objectives past this court of last resort, only failure lies ahead.

Four Iowa programs of part-time education carried on during the past year have been chosen to illustrate some of the accomplishments possible with varying types of part-time classes. Some of them will be reported in this issue and some in later issues. Unfortunately no report is available of a part-time class which is a continuation of high-school education in agriculture, tho situations exist in the state where part-time classes are so used, notably at Radcliffe, Iowa, where D. C. Bolles, the instructor, has been proceeding on this plan for several years. The Carroll and Osage reports show the possibilities in communities which have just established new departments. Ackley reports a program primarily for farm boys not in high school. The program at Manson has developed strikingly in a community which has long had vocational agriculture without part-time classes.

These examples are illustrative of a general awakening in Iowa to the possibilities of part-time work. There has been more progress in part-time education in the state in the past two years than in the 15 years previous. So fortunate has been the recent experience of Iowa teachers attempting part-time work that we can expect that teachers generally will take it up as fast as their communities are ready for it.

Organizing and Conducting a Part-Time Class

J. M. HOLCOMB, Instructor, Manson, Iowa

J. M. Holcomb

DURING the month of July, 1936, the writer began organizing a part-time class for the school year 1936–37. This department activity was to be added to the regular high school and adult school work already included in the Manson, Iowa, vocational agriculture department. Manson, a town of 1,400, is located in the central cash

of German and Scandinavian descent with the Germans holding a large majority. The percentage of farm boys in the community who attended college or university is very small. The farm bureau is the only farm organization of importance in the county. Several of the farm boys who are members of the Manson class are also in 4-H Club work.

After having taught in the community for one year, the instructor learned that there were several boys who would be interested in a part-time class. This information was gathered while supervising the high-school boys and the adult class projects. On several of the farms there were boys who were neither in high school nor college; and, upon being asked by the writer, signified their desire to attend a part-time class.

After having found out that there was a demand for a class, the writer talked the matter over with the superintendent of schools. He was very much in favor of starting a class, and we began to make plans immediately.

In order to save the time of the instructor and to develop leadership on the part of the boys it was decided to select an advisory part-time class council. After discussing possible council members with the superintendent of schools, the county agent, and some of the leading businessmen of the town, ten boys were asked to come in to discuss the setting up of a part-time class. These ten boys made up the advisory council. They were chosen because: (1) they possessed some leadership ability, (2) they represented various churches in the community, (3) they represented various neighborhoods around the town, (4) they represented various social and rural organizations.

The council assisted the instructor in: (1) selecting the course to be studied during the winter, (2) recruiting students, (3) arranging class meeting dates, (4) class demonstrations, (5) checking enrollment and maintaining student interest, and (6) conducting sports and social events.

The first meeting of the council was held during the month of August. At this meeting the group was numbered from one to ten and each boy chose, in order, one prospect for his squad. This procedure was repeated five times, thus eliminating any opportunity for the first squad leaders to choose the best prospects in the community for his own squad. Each squad leader was supposed to get four out of these five boys to complete his squad and to insure a class enrollment of 50. This method of enrolling the entire class proved very helpful to the instructor; in fact, the boys recruited practically the entire class in this manner.

The membership during the past winter consisted of 50 farm boys between the ages of 16 and 25. Twenty-one of them had completed only an eighth grade education. This large number of boys who have never attended high school is, no doubt, due to the fact that the part-time class enrollment was obtained from a larger territory than the high-school enrollment. Four of them had completed only one year in high school, two of them had completed two years, two of them had completed three years, and 21 had completed high school.

The course for the past year, as de- class met regularly on Monday evenings starting in September and continuing until March. One and one-half hours were spent in the classroom at each meeting and one hour was spent in the gymnasium playing basketball.

This hour was taken care of very largely by a sports committee consisting of three boys on the council. In addition to the regular meetings four social meetings were held during the course; these were under the direction of a social committee also from the council. It is the opinion of the writer that these two activities should be included in any part-time class since they provide an outlet for both social and physical activity for the boys.

During the months of January and February squad meetings were held during the afternoon from two until four o'clock on three days a week. A schedule was made out and a different squad leader would bring in his four boys each day for a meeting and conference with the instructor. Each squad reported for at least two meetings during these two months. These conferences were devoted to a discussion of supervised practice and special interest problems that grew out of the larger class meetings. It gave the instructor an excellent opportunity to explain more fully things that perhaps the boys had not understood clearly at the regular class meeting. It also afforded a fine chance to discuss the agricultural library and how to use it; to help the boys get started on their farm records; to become better acquainted with the boys; and to get a supervised practice program started.

In order to help the attendance record of the class, a squad contest was set up. During the entire course an attendance record was kept by squads and at the end of the year a dinner was served by the losing five to the winning five squads.

To help boys get started in farming should be a major objective of any agricultural part-time class supervised practice program. The Manson class is conscious of this objective. The instructor feels that contacts should be made with land owners in order to help the boys to get located on farms. A farm manager of a large insurance company has signified his desire to cooperate with the Manson department in placing some of these boys on farms that his employer owns. A 22 year old boy in the class, who is now farming on a partnership basis with his father, will probably be on one of the above mentioned farms next year. He is definitely planning on farming for himself next year and is checking equipment very thoroly with his instructor in order to be ready to begin. He has added some breeding stock this spring.

Two class meetings were spent in discussing the efficient use of farm machinery and equipment. As a result of these two meetings and the follow-up in the squad meetings, several of the boys began to apply the information that they had acquired to their home farms. The result has been that seven boys have rented additional land to the extent of 480 acres more than their fathers were already farming. They are finding that they can farm this additional land with but little additional machinery and equipment. Certainly these time ago. Four other boys who were enrolled in the class are now working on some sort of a partnership agreement with their fathers and by that method are getting ready to farm for themselves.

A study of farm financing led to the purchase of a 160 acre farm by two members of the class and their father. Brothers, 18 and 21, they found that they, together with their father, had enough money to make a down payment on a farm. After talking the matter over with their instructor they selected a 160 acre farm that joined their present farming unit. This arrangement not only permits the boys to remain at home, but it also makes the enterprise possible without buying a great deal of additional machinery. The study of farm financing in the classroom made them realize that owning additional land was not impossible if they followed the proper procedure, and the discussion in the squad meeting brought out the individual problem. The boys acquired information on a subject that not even their fathers, experienced farmers, had or used.

In addition to the above mentioned cases, 35 boys are keeping farm records on their fathers' farms. These records were started on January 1, 1937, and will be analyzed by a specialist on or about January 1, 1938. Twenty-seven boys are enrolled in the usual type of productive enterprise projects, such as livestock and crops. Fifteen are working as farm hands.

Plans have been made by the council to hold monthly meetings during the time that the class is not regularly in session. It is hoped that these meetings will help keep the entire class intact during the entire year. In addition to these monthly meetings, four or five Sunday afternoons will be spent playing kittenball.

A six year course of study has been tentatively decided upon by the council and the instructor. It will include farm management, livestock management, crop and soil management, rural social problems, farm engineering, and agricultural economics. The unit for next year will be livestock management.

The writer has found the above stated plans very helpful in conducting one of the most interesting classes in his eight years of teaching experience. He has found the advisory council a decided asset to him; the plan of meeting the boys in smaller groups was also found to be very helpful, especially in view of the fact that the class was so large. During the next year it is hoped that more use can be made of the squads and their leaders in contributing to the class discussion. Little use was made of this procedure during the last year. It is also hoped that some improvement can be made in the recreational hour. In order that more boys can participate at one time, the sports committee is at present planning to substitute volleyball in the place of basketball to help this situation.

If the enthusiasm and interest manifested in the class during the past year continues, it should certainly make for better adult classes in the community in the future. With the additional approved farming practices that the boys are introducing into the community, there is little doubt that the quality of farming will improve and

L. B. POLLOM

Farm Mechanics

Part-Time Class in Farm Mechanics

RICHARD C. LIGHTER, Teacher,
Camptown, Pennsylvania

FOR the last few years there has been a steady growth in the number of requests from adult farmers, high-school graduates, and boys who have never completed their high-school education for a part-time course in farm mechanics. Last winter we made these requests a reality by offering the first part-time class in farm mechanics to all persons outside of school age, who were interested in the subject.

After careful planning we arranged to have the classes start in February. The course was advertised thru the students in our school, local newspapers, and postcards sent to individuals.

At the first class 18 men were present, and they were divided into two classes, each group to meet once a week. The first meeting was devoted entirely to organizing the course to suit the desires of the group. The only requirement for enrollment was that a repair job must be brought from home. A cordial welcome was extended to visitors, who usually visited the class the first time, then returned later with a repair job and joined in the work.

When the second meeting was held a week later, each group had grown in number. The president of the school board was one of those most regular in attendance. The classes were scheduled to close at 10 p. m. but many would stay and work until 11 and sometimes later. The number grew until the total enrollment reached 46.

After five meetings were held we received a request from five ladies who wanted to attend and learn chair caning. This was arranged and all the ladies attended both meetings each week for the remainder of the course. They completed seven chair bottoms.

A typical evening in the shop would have shown 12 members filing hand saws, two sharpening and tempering cold chisels, one caning a chair bottom, one sharpening auger bits, one making a rope halter, one gumming a two-man cross cut saw, one mending a piece of harness; all going on at the same time during the entire evening.

The following list of jobs, a total of 173, were completed during the course:

One buzz saw frame completely built; 17 hand saws cleaned and sharpened; two pruning saws cleaned and sharpened; 11 two-man cross cut saws cleaned, gummed, and sharpened; seven 30" circular buzz saws cleaned, gummed, and sharpened; one 8" combination circular saw sharpened; 21 cold chisels sharpened and retempered; two new cold chisels made and tempered; three punches sharpened and retempered; six iron door hooks shaped from scrap iron; one wire fence staple puller made and tempered; two two-horse evener clevises

end shaped and retempered; four singletrees completely ironed; two log chain hooks heated and reshaped; one hay rake wheel completely overhauled; three axes ground and whetted; one draw knife sharpened; one pair ice skates sharpened; 16 auger bits sharpened; nine plane blades sharpened; two wood lathe skews sharpened; two rope halters made; 14 chair bottoms caned; one chair seat repaired and upholstered; three chairs repaired and glued; six wood turning jobs; four soldering jobs; one harness mending job; three two-horse eveners; two singletrees; 18 ladder rungs; one carpenters' level tested for accuracy; one trailer end gate made; one buzz saw arbor shaft collar rebabbitted; and one wood saw arbor shaft balanced.

Of great satisfaction was the fine spirit of those enrolled, the friendly competition, and the good times. The writer outlined, arranged, and did all of the instructing during the entire course. A very complete record of the course is on file. In summary we have the following:

Course began Feb. 18 and closed May 1, 1937.
Time: 8 p. m. to 10 p. m.
Enrollment divided into two classes.
Each class met 11 times.
Total enrollment—46.
Average weekly attendance—36.
Ladies in attendance—5.
Age range—16 to 60 years.

Interest very high.
Greatest distance from school—9 miles.
Percent living on dirt roads—75.

Master Teacher

(Continued from page 85)

His work has not been confined to the classroom of his high school but has included classes for adult farmers in his community each year since 1929. He is conducting three such classes for farmers at the present time and 260 farmers have received instruction in these classes.

Boys who have dropped out of school and who are seeking to establish themselves in farming are not forgotten, and 69 of them are receiving assistance in the solution of their problems in part-time classes designed especially for this group.

One hundred and six young men, who have had one or more years instruction in vocational agriculture under Mr. Pardue, are now farming in their own right in Henry County, and 16 others are either enrolled in agricultural courses at the University of Tennessee or working in closely allied fields.

The progress made in supervised farm practice work by students in his classes has been particularly outstanding. In 1924, 17 boys conducted 17 farm enterprises under Mr. Pardue's supervision and in 1936, 62 boys conducted 149

those enrolled in Mr. Pardue's classes in 1936 earned a labor income of $21,265.00.

Many farmers meetings are held each year and thousands of questions are put to him annually by farmers who attend these meetings and with whom he is in daily contact.

Mr. Pardue is a graduate of the University of Tennessee in agriculture and in addition to his school and agricultural work never misses an opportunity to be of service to his community in church and civic affairs. He teaches a boys' class at Sunday School, is on the board of stewards of the First M. E. Church, south of Paris, is an active member in the Masonic Lodges and lends assistance in all civic organizations; in short, he is not only an excellent teacher of agriculture but an invaluable citizen of Paris and Henry County.

Teaching Agriculture in a Small School

(Continued from page 85)

bandry, crops, soils, forestry, dairying, animal husbandry, fruit growing, general science, rural law, rural sociology, farm bookkeeping, and farm mechanics. This last subject is a life's work in itself and many outstanding teachers owe their success to the work they have done in farm mechanics. This subject includes many things of vital interest to all boys and especially to farm boys. The course, spread over four years, includes such things as farm carpentry, blacksmithing, soldering, rope work, harness repair, electrical wiring and repair, tool sharpening, care and operation of farm machines, and concrete construction. In fact, this subject as now outlined, includes all those jobs of construction and repair which the modern farmer, sooner or later, must do.

What does the teacher do with his spare time? Some might say he fills out reports, but seriously, the work which the agriculture teacher does in connection with, or in addition to, his classroom teaching is of very great importance. This work includes project supervision, training judging teams, conducting educational field trips, supervision of contests, organization and conduct of fairs, demonstrations and exhibits, and participation in county, state, and national contests and meetings for the boys, and evening and part-time classes. Who can say which of these is the most important? Project supervision, of course, holds the most prominent place but many boys and their communities have gained much from the efforts of their agriculture teacher in these additional activities. Are they worth while? More and more, the answer is in the affirmative. Certainly, it means more work, but remember, that it is a monument we are building. We must use care in selecting the place in which

Valuable Teaching Material

(Continued from page 87)

time. These records required only one double period. The testing was done out of class period, but the first Monday of each month was set aside to work on records and by Friday every record had to be on the blackboard complete.

At the end of the year the summary was made by each boy of his home herd. A thoro study was made of the cows, so as to know from which cows to raise calves for the coming year and which to cull as soon as possible.

This testing has brought forth the thought of better herd sires, and a breeding program has been set up by each boy. First, to secure heifers from cows with records of 400 pounds of butterfat; second, to secure bulls from cows with records of 500 pounds or better and their sires dam with over 700 pounds of butterfat. Herd sires requirements of these amounts have come about by realizing the difference in individual cows and the desire to improve the herd. Several purebred cow replacements have been made by the boys' fathers.

The influence of dairy herd improvement has been a general culling; replacement by better cows, heifers, and calves; and selection of purebred herd sires from families with records.

A real lesson is learned by Little Valley Future Farmers during their four years, they become skilled testers and have four complete years' records to show their changes and improvements.

Floyd Harder, president of local F.F.A., this year has increased his herd 90 pounds by culling and replacements. Starting with 26 cows, culling to 20 cows returned more milk. In 1932, 26 cows averaged 6,060 pounds of milk with 222 pounds of butterfat. In 1933, 20 cows averaged 7,070 pounds of milk with 261 pound of butterfat; in 1934, 8,141 pounds of milk and 301 pounds of butterfat; while in 1935, 8,351 pounds of milk and 312 pounds of butterfat, giving an increase of almost 2,300 pounds of milk and 90 pounds of fat.

What Progress?

(Continued from page 89)

Fourth Year

1. Study outlook for broilers and determine advisability of putting in early broilers before getting chicks for pullets.
2. Secure baby chicks. Review plans made previous years.
3. Secure feed for chicks. Review plans made previous year.
4. Care and management of chicks until cockerels are sold. Review previous plans.
5. Marketing cockerels and scrub pullets. Review previous year's plans. Study present market situation.
6. Close baby chick enterprise, summarize, analyze, and interpret results.

Obviously there is some repetition and this is to be desired provided it is properly planned and does not develop into mere time serving. At the same time the boy advances from operative to managerial jobs in the enterprise, and from simple to more complex problems. In

No discussion of planning could justify the omission of the progress attained in preparing individual job plans. The principles and procedures generally recommended by many who have used written plans may be briefly summarized as follows:

1. After the enterprises have been selected, indicate those jobs that will be planned in detail.
2. Job planning should be included in the lesson plan as a method in the step application. The lesson has not been properly taught if the pupil has not prepared the plan for performing the job.
3. In planning managerial jobs, state the conclusions reached and the reasons on which they are based.
4. In planning operative jobs, answer the questions, What? How? When? and Where? as they apply; adapt the plan to the specific home situation; be sure to include consideration of cost. If any departure is to be made from recommended practice, justify such departure. Tell what *will* be done, not what *should* be done.
5. Score the boy's work on the home farm in terms of the approved plan.
6. Whether the plan be written or not it is important that the boy have a definite understanding as to the procedure he will follow and that the teacher approve such procedure.

Good teaching, good planning, good farming—these three are inseparable. How much development may we expect in the next 20 years as compared with the first 20?

Book Reviews

Farmers' Shop Book, Louis M. Roehl, (Fifth Edition, 1936), The Bruce Publishing Company, Milwaukee, Wisconsin, 470 pages, profusely illustrated. Price $2.80. Many changes have been made in this new edition. Not only have there been added many more construction and repair problems but also several new items and divisions have been included, such as cold and hot metal work and the fitting of farm tools. The section on poultry appliances has been extensively revised. The book is well adapted for use in schools teaching vocational agriculture as well as in schools having a general shop course. RAO.

Fitting Farm Tools, Louis M. Roehl, The Bruce Publishing Company, Milwaukee, Wisconsin. Price $1.

The 102 pages are so well illustrated that the high school pupil can proceed with little guidance to sharpen and fit the common farm tools. Several copies will serve a good purpose in the farm shop room. RAO.

Profitable Farming and Life Management, Wilber J. Fraser, Interstate Printing Company, Danville, Illinois, pp. 416, illustrated, list $2.75. A treatise on farm management written on a level requiring only a limited knowledge of economics to understand the material. The book is written from a practical standpoint, and suggestions offered appear to be based upon reliable experience. Discussion of interaction of unlike factors in production is valuable and interesting and is stressed thruout the

book should prove interesting and helpful in presenting this subject to vocational agricultural students. APD

Orchard and Small Fruit Culture, E. C. Auchter and H. B. Knapp, (Third Edition), John Wiley and Sons, New York, 616 pages, 278 illustrations, price $5 net. In the third edition statistical and bibliographical material has been thoroly revised. The book is intended for undergraduate courses in deciduous fruit growing in college, and commercial fruit growers. However, the text is not too technical for secondary school pupils to comprehend readily and should prove a valuable reference for vocational agricultural students. Valuable reference lists of books, bulletins, and scientific papers follow each chapter. Statistical tables and charts are revised to include data from the 1935 agricultural census. This should prove helpful in long-term project planning. Discussion of plant and equipment required for commercial fruit growing should be valuable for guidance in project work in this field. Illustrations are well chosen and the mechanical features of the book are excellent. APD

Feeds and Feeding, Abridged, by F. B. Morrison, (Seventh Edition), The Morrison Publishing Company, Ithaca, New York, 503 pages, illustrated, price $2.75 list. Part I presents briefly the fundamental principles of animal nutrition and emphasizes the bearing of these principles upon the practical feeding of livestock. Part II discusses all the important feeding stuffs used in this country, rather than merely the feeds available in any particular district. Part III takes up the practical feeding, care, and management of each class of livestock and summarizes the special values of the important feeds for each class of animals. Appendix Table I showing the average composition and the content of digestible nutrients and mineral and fertilizing constituents in the important American feeding stuffs has been condensed from the much more extensive table in Feeds and Feeding. Appendix Table VII gives example rations for the various classes of stock and offers valuable guidance for students carrying projects in the field of animal production. The text is eminently fitted to the needs of vocational agricultural students. APD

Amer. Vocational Meeting

(Continued from page 83)

Saturday, 9:00 a. m., December 4
Chairman: Arthur M. Ahalt, President, Maryland Association of Teachers of Vocational Agriculture, Frederick, Maryland.
"Organizing Part-time Schools." C. E. Richard, Vocational Agriculture Instructor, Mt. Jackson, Virginia.
"Methods of Conducting Part-time Schools." R. L. Dennison, President, West Virginia Agriculture Teachers, Potomac State School, Keyser, West Virginia.
"Supervising Projects of Part-time Students." C. T. Parduc, President, Tennessee Agriculture Teachers, Paris, Tennessee.
"Our Obligation to Out-of-school-youth." L. M. Sasman, State Super-

Studies and Investigations

E. C. MAGILL E. R. ALEXANDER

The Objective Question as a Factor in the Improvement of Teaching

CLARENCE J. HEMMING, Graduate Student,
Agricultural Education, St. Paul, Minnesota

C. J. Hemming

DURING the past few years, there has been an increased tendency to standardize certain procedures and methods in education. With this standardization has come the increased use of the objective achievement test. Until recently there has been little work on the standardization of tests in the field of agriculture. This has been due in part to the difficulty in standardizing the teaching methods of agriculture, because of the necessity for the individual teacher to adapt his teaching methods and the course of study content to the needs and interests of the community.

More and more of the teachers are realizing that there are certain minimum essentials as they are termed in the modern philosophy of education. It is on these minimum essentials that the objective tests in agriculture can be constructed. In this article, it is the aim of the author to lend some aid and suggestions to teachers in the construction of objective achievement tests for use in the classroom.

Fundamental to the construction of good tests is the understanding of the uses and the functions of the examinations. Hawkes, Lindquist, and Mann give the following objectives in their book, THE CONSTRUCTION AND USE OF ACHIEVEMENT EXAMINATIONS:

1. To discover the difficulties encountered in the class.
2. To discover the difficulties of the individual student.
3. To give the teacher an idea of the effectiveness of his instruction.
4. To determine the effectiveness of certain methods and procedures in the classroom.

Basic to the subject matter to be tested is, of course, the objectives of the course, of the teaching unit, and of the approved practice. It becomes necessary, then, under a satisfactory program of objective testing, to have objectives which can lend direction to the teaching program. In a summary of the teacher objectives, the final results usually evolve into the acquisition of a definite vocabulary peculiar to the subject matter taught, the knowledge of certain facts and principles, and the

structor may then test or measure the degree of skills, the kinds of ability, the amount of information and understanding, the quality of attitudes, and the appreciations which the student has achieved.

It has been pretty generally accepted that for a general achievement test the objective type of question best answers the purpose. A general achievement test is defined by Hawkes, Lindquist, and Mann as "one designed to express in terms of a single score a pupil's relative achievement in a given field of achievement."

What is a satisfactory test? "It is an instrument which gives evidence of the degree to which the student or students are reaching the objectives of teaching."[1] In order to do this, one must recognize the necessity for examination items to possess discriminating power.

In most tests, we find questions which:

1. Can be answered by everyone in the class.
2. Can be answered by none of the class.
3. Can be answered by a greater percentage of the pupils who rank high in the test than those who rank low and vice versa.

A test of perfect discriminating power is one in which every pupil who answers the item correctly ranks higher in the general achievement level scale than any pupil who fails. One can easily understand that a question, in order to have discriminating power, must indicate the degree to which success or failure in any given item is correlated with the possession of the ability which one is attempting to measure.

A good test should have in it not only items which only the most brilliant student can answer, but must have items ranging all the way from zero discrimination to perfect discrimination. This is essential in order to test the various ranges of ability in the class. From this it can be concluded that the average score should be in the neighborhood of 50 percent of the highest score made in the test. The test should be difficult enough so that no one answers 100 percent of the questions correctly. Unless this is true, the test does not discriminate.

In all general achievement tests, there are certain things which must be avoided in order to make a successful test. No doubt all are familiar with test items which have in them certain clues, or cues, by which students may anticipate the correct answer without any knowledge of the information intended to be "never," "all," etc. are examples. In others, one may find the use of incomplete statements which are constructed in such a manner as to give a definite clue to the correct answer. A plural verb and a singlar choice in multiple choice items are common errors in construction. Or one may find phrases which are peculiar to the instructor or to the text which is used and which give a clue to the answer. The inclusion of certain words from the principal statement of the multiple choice item in the choice often gives the student a clue to the correct response. The association of names and the nationality are often cues.

Before drawing up the test, the constructor *must have*, as has been stressed before, objectives to measure. Then he should have a topical outline of the principles which he intends to measure, and the vocabulary he desires to test. The importance of the different principles must be weighted to allow the emphasis to be placed on the more significant phases of the course of study. In test construction, in general, the instructor should avoid making such statements as "we will have 50 true-false questions," "25 completion questions," and so on. It is much preferred to draw up the items on cards or 4 x 6 sheets of paper and to assemble them later. This will facilitate revising and eliminating undesirable questions.

Some general principles might be:

1. The question should be clear.
2. The items should serve a definite function.
3. Few types should be used in one examination.
4. The questions should be checked for cues.
5. The questions should discriminate.
6. Avoid the overlapping of questions, requiring the knowledge of similar facts or the one item answering a preceding or a following item.

Again one might set up certain rules in regard to the assemblage of the test. As follows:

1. The directions should be clear and adequate.
2. The questions should be readable and free of errors.
3. The questions should be assembled so as to give maximum ease in answering and in scoring.
4. The time allowance should be agreed upon.
5. In general, the items should be weighed equally.
6. The name, date, and other wanted information should be at the top of the test paper.

Now let us take up the specific types of questions. Many more forms are used than will be here considered but emphasis will be placed on the more common forms.

I. Simple Recall.

A direction question which can be

This type of question is very useful in the testing of factual information, but it's not well adapted to testing for interpretation. The wording should be clear and not in text book form.

Example:

Directions: Complete the following statements by inserting the proper word in the blank at the left. Be careful to have the word in the blank bearing the number of the blank within the sentence.

.....1.
The most desirable weight for market lambs is.....(1).....pounds.
.....2.
The most prolific breed of lard hogs is the....(2).....

II. Sentence or Paragraph Completion.

This type of question is similar to the preceding except that the recall is for more than a single word in one item. A disadvantage of this type is that it may, if not used carefully, foster rote learning. This is especially true if direct statements are taken from the text. The clues within the question are to be avoided and especially should avoid cutting the statement too much. Do not test the verb in these questions.

Example:

Directions: (same as previous).

.....1.
.....2.
.....3.
The Percheron is a breed of....(1)....(class) horses which originated in the province of.....(2).....in .....(3).....
.....4.
.....5.
Pigs should be weaned at approximately.....(4)..... weeks of age and castrated at about .....(5).....weeks of age.

III. Matching.

Matching questions are merely a modified form of the "multiple" choice question in which all the items in the key list are possible choices. This is a very compact form of a question which has, if carefully constructed, a fairly high reliability. It is important here to consider certain principles of construction. They are:

1. Try to have both the key list and all of the responses on a single page.
2. Allow more responses than there are statements.
3. Arrange the responses in alphabetical order to facilitate answering.
4. Keep in each matching group, those items, which are similar and whose correct responses are similar to the other responses in order to aid in the discriminating power.
5. Do not capitalize the item responses except when normally capitalized as in proper names and names of places.

Example 1:

Directions: Below you will find a list of terms with a key number for each. Place the number of the term in the key list which correctly answers the statement in the blank at the left. There are more terms than there are statements. No term is to be used more than once.

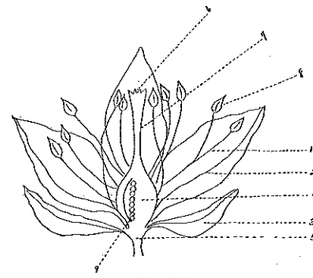
Key List

1. No Suitable answer
2. Coleoptera
3. Diptera
4. Hemiptera
5. Homoptera
8. Thysanoptera

.....1. The house fly
.....2. The honey bee.
.....3. The potato beetle.
.....4. The butterfly.
.....5. The chinch bug.
.....6. The plant louse.

Example 2:

Directions: Under the labeled drawing of a flower is a key list of terms which describe the parts of the flower. Below this is a list of numbers corresponding to the number of the flower parts. From the key list select the term which correctly names that part and place it in the blanks preceding the number of the flower part.



Key List

1. anther	4. ovule	7. stem
2. filament	5. petal	8. stigma
3. ovary	6. sepal	9. style

.....1.....4.....7.
.....2.....5.....8.
.....3.....6.....9.

IV. Multiple Choice.

Perhaps the commonest of all types of questions is the multiple choice or more correctly called the single choice. This is a direct question which has several choices in regard to the proper answer. The number of choices depends on the question altho it is thought that four to five is preferable. More than this does not yield any particular advantage.

No type of question is so difficult to construct as is this type. Errors, pet phrases, cues, and such, creep into these questions with regularity. These questions are, however, very useful since questions in which the student must apply himself can be evolved. In items of this type, the constructor of the objective tests has a question which can be used to measure the students' ability to apply facts and principles to a definite problem, and which can be easily scored.

Suggestions which may aid in their construction are:

1. All possible answers should be plausible answers. (Too often the choices are such as to have no degree of similarity and so obviously wrong as to be easily guessed on the basis of elimination by even the least prepared.)
2. Each choice should be of the same grammatical form and should make a complete sentence with the major part of the question.
3. Have only one correct answer.
4. Word the choices simply.
5. Avoid use of "a" or "an" before the choice as "The horse is ("a" or "an") (1) cow, (2) animal, etc.
6. Alternate the choice number which is the correct answer.
7. Single space within the item.
8. Double space between items.

Example 1: (Factual)

1. The highest price wholesale cut of meat in the beef carcass is the 1. shank, 2. chuck, 3. loin, 4. round, 5. ribs.

.....1.

2. A recommended variety of spring wheat for Minnesota is 1. Hope, 2. Thatcher, 3. Kanred, 4. Marquis, 5. Mindum.

.....2.

Example 2: (Application)

1. During the previous depression, one often heard the expression that "the farmer sold for less than his cost of production." The farmer did not cease production, however, but rather kept on producing and selling. The explanation of this is that:

1. The farmer did not lose anything except his ordinary profits.
2. The farmer knew the government would make up the loss by subsidies.
3. The farmer does not actually realize a cost of production.
4. Only the farmers on submarginal lands did not receive their cost of production.
5. The farmer lost money, but the losses would have been greater had he discontinued his production and sales.

.....1.

2. In the swampy areas of northern Minnesota which are composed largely of peat, one should expect to find the root systems of plants 1. near the surface, 2. below the water table, 3. very deep, 4. spreading over wide areas and deeply penetrating, 5. composed of tap root systems.

.....2.

V. Reverse (multiple) Single Choice.

This is very similar to the single choice question except that instead of the one correct, or best answer, the student chooses the one false, or incorrect, statement. Construction is very similar to the above.

Example:

Directions: Choose the incorrect answer. Place its number in the appropriate blank.

1. The breeds of swine which originated in the United States are the 1. Poland China, 2. Duroc Jersey, 3. Berkshire, 4. Chester White, 5. Spotted Poland china.

.....1.

2. The following breeds of chickens are members of the Asiatic class of fowls 1. Cochins, 2. Longshans, 3. Orphingtons, 4. Brahmas, 5. Leghorns.

.....2.

VI. True Multiple Choice.

This is another modification of the (single) choice type of question. The author has called this the true multiple choice question because it is really a multiple choice question in which there are possibilities of two correct answers. The same general principles hold for their construction as for the single choice.

Example:

Future Farmers of America

Future Farmer Chapter House

IVAN JETT, Adviser,
Stamping Ground, Kentucky

Ivan Jett

FOR three years the Stamping Ground Chapter of Future Farmers of America tried to get a chapter house. First, we considered building one of logs, but there were not enough logs available. Several times we tried to acquire old buildings which were to be torn down and moved—all without success. We continued to save our money, and this year we erected our chapter house.

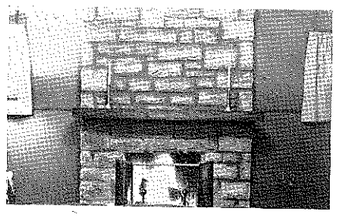
The boys did all the work except the chimney, which was built by stonemasons at one-third of their regular salary. The boys quarried all the rock, hauled it, laid the foundation, built the building and everything about it with this one exception. For weeks 15 to 20 boys came on Saturday with their trucks and teams to haul rock. We worked during school in the agricultural period, after school until dark, and came back nights and worked until 11 o'clock—not just once, but dozens of times.

The house is 30 feet long and 22 feet wide, with a porch 8 feet wide and 20 feet long. The foundation is 2 feet thick 30 inches in the ground and made from native limestone rock. The walls are made of 2 x 4 studs covered on the outside with 8-inch redwood weatherboarding. On the inside is 10-inch

sheathing, covered with a light brown wallboard, known as Masonite. The Masonite is panelled off with walnut strips, to give a very pleasing appearance. The house has five large windows, a French door, and two small casement windows on each side of the chimney. The roof is covered with wood shingles.

The chimney is a work of art. Six feet wide and three and one-half feet thick, with a wood fireplace that holds three-foot logs. It is made entirely of

L. R. HUMPHERYS



The mantel is a piece of walnut 4 inches thick, obtained by cutting down a tree and hauling to a sawmill.

It was our idea to have a modern, inexpensive building. We selected indirect lighting as typical of a trend we wished to encourage. This made it necessary to paint the ceiling a light cream so that it would reflect the light. We secured lighting fixtures of the latest design. In addition, the room is lighted by two floor lamps and two table lamps.

We were very fortunate in financing our house. We had saved $250, and the county board of education agreed to match this amount. Two of our local industries gave us $100 each, but not until we had nearly completed our work and they were convinced of its value. For example, one of the industries offered us $25 but said they would rather wait and see how the house progressed. They waited. They became even more familiar with the F. F. A. and voluntarily gave us the $100. Many of our local merchants gave $25, $15, $10. Most of the donations were smaller, but all of them helped. We sold magazines to raise money, gave a program. Sears Roebuck sent us a check for $25, with a very nice letter complimenting the F. F. A. organization. The Kentucky Utilities sent one of their representatives to visit us. He gave us all our lighting fixtures, including the lamps. A local nurseryman gave us all our shrubbery, which amounted to about $35.

When we had finished, we found that we had $700 invested in the building, not including labor and rock, and $350 in furniture and furnishings. The furnishings in the building are good, but we believe they should be—that the farmer deserves as good things as other people. We purchased two three-piece mohair frieze living-room suites, studio couch, knee-hole desk, mirror, modernistic end tables, occasional tables, radio, Venetian blinds, rugs, and six occasional chairs. We also purchased andirons and firescreen for our fireplace. It has made it warm, comfortable, inexpensive, and practical.

When this building was erected, we had a twofold purpose in mind. First a chapter house, and second a model for our "Home Improvement Campaign," which we started the first of the year. We want better homes, better lighting, newer furniture, paint on the outside of

and others will make a happier and more profitable farm life. We want them.

Future Farmer Fair Helps the Vocational Agriculture Program

K. S. HART, Instructor,
Waterville, New York

FAIRS are one of the highlights in every community. They still continue because of their educational and recreational benefits. Apart from these regular organized fairs, a Future Farmer fair and agriculture exhibit sponsored and conducted by the Future Farmer chapter of a school is a decided benefit both to the community and to the young farmers themselves.

The Future Farmer fair at Waterville, New York, is now an annual affair conducted entirely by members of the local chapter. It is held during the first part of October each fall and is made to coincide with the date of the monthly Parent Teacher's meeting.

At the last fair there were 500 different exhibits and all were exhibited by the members. The fair includes the different classes as dairy, poultry, swine, sheep, farm crops, and fruit. A special department for the exhibits of 4-H members was also included. In addition one or more educational exhibits such as crop disease and grading potatoes were shown.

The fair is organized similiar to any large fair, which gives the members valuable experience. At a regular Future Farmer meeting, the fair officials are

Showmanship Contest

elected by the members, and include a director and a superintendent with assistants for each department.

The exhibits are judged by some near-by vocational agriculture teacher, who makes three placings in each exhibit class. Ribbon awards are then made for each placing. In addition to these ribbon awards various articles of merchandise are also given as premiums. A special committee of the members is appointed and they visit merchants and

a box of candy to a purebred calf. These merchants all seemed willing to contribute, and many offered articles before being asked. As we do not get sufficient of such prizes for each exhibit class, these premiums are awarded on a point system. A first place gives three points, a second place two points, and the third place one point. In this way the Future Farmer with the most points won, selects the best premium. This point system of making the awards also serves to stimulate the members to exhibit more and thus enlarges the fair.

For the benefit of the dairy members we have a showmanship contest in which the student is judged, not on his animal, but on how he himself has fitted and trained the animal. This has proved to be a very popular feature of the fair to the members as well as to the parents and friends.

Co-operation Thru F. F. A. Activities

H. D. GARVER, Adviser, Shawnee-Mission Chapter, Merriam, Kansas

THE teaching of co-operation thru the F. F. A. chapter should be one of the first considerations of every vocational agriculture instructor. The necessary planning and execution of plans should be under his constant guidance and supervision, but not his direction. Too many times the busy instructor takes over duties which should be delegated to his boys, and the project becomes "your" project instead of "our" project.

It should be remembered that every co-operative project whether social, recreational, civic, or productive should be for the sole purpose of providing experiences by which boys may learn from life-like situations. Only by such co-operation may co-operation be taught with lasting benefits. These may be illustrated by reviewing certain co-operative activities in the Shawnee-Mission chapter. This chapter in a community surburban to greater Kansas City has been reasonably successful as an organization. Co-operative activities have always played an important part in this chapter's program of work. A majority of the projects have been successful as regards goals set up. Other projects have fallen short of their goals. In either event very definite reasons have usually been found upon analysis for failure or success. These reasons may be summarized as follows:

Requirements for Group Projects

1. Participation should be voluntary with each member assuming a definite responsibility and having something (time or money) invested in the project.

2. The interests, needs, or wishes of individuals or groups contacted by the co-operators should be considered.

3. Individual members must share, proportionately to investment, in the outcome of the project.

4. Projects must be wisely selected and plans carefully worked out before starting operations.

A review of some of this chapter's co-operative activities will illustrate these points.

Co-operative Projects

One of the successful activities has been a battery brooding project. A group of 16 F. F. A. members interested in poultry raising, each bought one or more shares at four dollars per share. With money so raised, the boys bought 450 White Rock day-old chicks and placed them in a home made battery brooder. The balance of the money was used to buy a commercial mash (at ton rates), and to establish credit for the balance of feed needed. At this point One boy laid down on his job of helping care for the birds and was fined as previously agreed. The birds were sold to a party who desired that particular breed of broilers. This was determined beforehand. The project was a success and each boy took home a seven dollar check for every four dollar share he owned.

Another project was that of publishing a chapter annual called The Owl's Nest. Competitive story writing provided material on chapter activities for the printed and illustrated booklet—one of the first of its kind. Individual solicitation of Kansas City business firms for advertising space financed the project. This was a successful project and every member had a printed copy of his chapter's activities for the year, including a good picture of his fellow members. The only cost was a considerable amount of effort on the part of those participating. The fifth annual issue will be printed this spring.

Putting Something Into the Project

Of course not all projects have been successful, as was the case of one project conducted in the early years of the chapter's history. The boys were induced to conduct a class laying project. Each boy was required to invest one dollar and the board of education loaned the balance for a 100-hen laying flock. Also the board guaranteed the boys against personal loss. Market conditions became unfavorable and the boys lost interest. They could not lose anything, so they quit. The project failed, and the board of education had to pay out about $40. There was little voluntary participation, practically no risk of investment, and a poorly organized delegation of duties. Probably the teacher learned more from this project which failed than he did from the successful ones.

Some of the other projects having varying degrees of success were: a co-operatively owned feed grinder; an F. F. A. officers school; a five acre truck project; two electric incubators; furnishing an F. F. A. reading room and library; a one-fifth share in a large cabin at a near-by lake; a spray rig (under construction); and financing a trip to Homestead, Florida, a year ago and playing host to the Florida boys last summer.

The Electric Hotbed

Probably the most unusual and the most interesting project of all has been two electric hotbeds. Six years ago a new method of heating hotbeds by

culty in obtaining sufficient manure for heating their hotbeds. Whole train loads of horse manure were shipped out from Kansas City Stockyards. The Kansas City Power and Light Company, anxious to serve the community and to develop a paying rural load offered to donate equipment for several beds for experimental purposes. Such an offer was made to this department and accepted. At the same time a manure hotbed of conventional design was constructed alongside the electrically heated one. Recording instruments were installed and everything possible done to make a thoro comparative study of the two beds. Altho adequate information on electric hotbed operation was not available at that time, a reasonable degree of success resulted. It was soon found that standard practices of irrigating, ventilating, and insulating were not best adapted to the new type bed. Further experience showed the mistake of trying to maintain growing temperatures continuously, and that the sashes should be kept closed longer in order to conserve heat from the sun's rays. As a result the consumption of electricity was reduced by nearly half without harm to the plants. The second bed (the one heated by manure) was electrified after the first year.

Plants grown in the two hotbeds have been used primarily for individual home projects. Participating members retain those of one bed, while those grown in the other bed become the property of the chapter. Since the hotbed equipment was largely donated in the first place, it was decided to turn the chapter plants over to the local unit of the Red Cross for welfare work. Plants not used for this purpose are sold outright to the public and funds used for other welfare work. This particular project has not been conducted for profit to the chapter. In this way it was hoped to develop a sense of civic responsibility on the part of members.

Another policy on all co-operative activities has been to refrain from interfering with private or public business ventures. The incubators hatch only for project use, the feed grinder used only for project livestock of members, and recreational activities kept in line with school and church calendars. This policy has resulted in the donation of equipment, including the two electric incubators, a large electric motor for the feed grinder, the hotbeds, special prices on other items and best of all—the good will of people in this community. This last item was best shown last summer when the local Historical Society furnished a splendid "feed" for the visiting Homestead, Florida, F. F. A. boys and members of this chapter. This was more than a return for a rock garden constructed on the grounds of historic Old Mission, from which this school derived its name.

Co-operative activities have been somewhat halted this year during a delayed building program involving a new shop and classroom for this department. The splendid spirit shown by the boys as they held meetings in a room nearly filled by stored equipment, and even building materials; as they carried on by taking the incubators home with them and otherwise endured incon-

ing together for the purpose of making more money. It means the united effort of a group of individuals for the purpose of improving conditions existing in the community. Teaching co-operation deals first of all with the guiding and training of individuals in the best interests of organized society.

"Now this is the law of the jungle
As old and as true as the sky
And the wolf that shall keep it may prosper
But the wolf that shall break it must die
As the creeper that girdleth the tree trunk,
So the law runneth forward and back
For the strength of the pack is the wolf,
And the strength of the wolf is the pack.
—*Kipling*

The Objective Question

(Continued from page 95)

swer. On the blank at the side place the *number* or *numbers* of the correct response. Both the answers must be correct to gain any credit, that is, if the answer is "1" and "3" for an item and you mark only "1" the entire answer is counted as wrong. In some, there may be no correct answer, in that case, leave the question blank.

....1. The capacity of a dairy cow to produce milk is influenced by 1. the protein in the diet, 2. heredity, 3. the fats in the feed, 4. the amount of roughage fed, 5. the amount of water given.

....2. Diseases or parasites of sheep include 1. coccidiosis, 2. lung worms, 3. ticks, 4. nodular disease, 5. roup.

VII. True-False.

Perhaps no type of question has been so widely discussed and used as the true-false item. It is one of the oldest types of objective test forms, and also one of the most abused. More poor items are made each year of the true-false type than of any other. Because of the difficulty in constructing good items and the element of chance, and since there is an equal opportunity to guess the correct answer, the true-false type of question is steadily falling by the wayside.

As a guide to teachers who wish to use the true-false type of question the following recommendations are suggested:

1. The question should be definitely true or false.
2. Avoid long expressions of text book character.
3. Avoid double negatives.
4. Avoid catch questions.
5. Avoid trivial statements.
6. Avoid determiners such as "always," "never."
7. Avoid ambiguous statements.
8. Avoid distraction.
9. Use approximately an equal number of true and false items.
10. The test should be long enough to insure accuracy.
11. Weight for guessing by scoring right minus wrong.

Example:

Directions: Place a plus (+) before the statements which you believe are true and minus (−) before those which you believe are false.

....1. Alfalfa has a tap root system.

....3. The leading breed of hogs in Minnesota is the Berkshire.

There are several types of true-false questions. The wrong word type in which the students select the word which makes the statement incorrect, and then places in a blank a word which will make the statement true is a far more reliable item than the regular true-false.

The controlled correction is similar to the above except that for the correction, the correct word must be chosen from a key list.

Example:

Directions: The following questions are true-false questions in which you are to place a plus or minus in the blank before the item and in addition you are to chose a word or words from the key list above which, when inserted in the item, will make the statement true.

Do not change the underlined words.

1. bacteria	5. Percheron
2. fungi	6. Belgian
3. Yorkshire	7. Duroc
4. Berkshire	8. Poland China

....1. The leading breed of hogs in Minnesota is the Berkshire
. . . . . .
. . . . . .

....2. Infectious abortion in cattle is caused by a non-filterable virus.
. . . . . .
. . . . . .

A special use of the true-false type of question is in the situation- application type of item. This is perhaps best explained by an example. The simple explanation is the use of the true-false statement as possible conclusions to a definite situation.

Example:

Directions: The following exercises consist of situations each of which is followed by a series of statements based upon the situation. If a statement is true and is in agreement with the facts presented in the situation write a (+) in the blank at the left of the statement. If the statement is false or in any way is not supported by the facts as given in the situation place a (−) in the blank at the left of the statement.

Mr. Peterson has a management problem on his hands. He has four male dairy calves. Their weights at birth were:

No. 1 80 pounds
No. 2 60 pounds
No. 3 95 pounds
No. 4 106 pounds

Calves will bring the highest price on the market when they weigh 200 pounds. To bring the calves up to this weight, Mr. Peterson is planning on feeding them a grain mixture consisting of equal parts of corn and oats. The oats are worth 40 cents per bushel and the corn 70 cents per bushel. The calves will be started out on skim milk which they will receive until they are about 12 days old. At this time, they will receive a mixture of whole milk and skim milk. The proportion of whole milk will be decreased until they are on skim milk alone. Whole milk is worth $1.80 per hundred at the local creamery and skim milk valued on the value of pork is worth 40 cents per hundredweight. In addition to the milk and the grain they will receive alfalfa hay which is valued at $12.00 per ton.

In an Experiment Station Bulletin which Mr. Peterson has, there is the will consume approximately

2.1 pounds of grain
1.8 pounds of hay
1.5 pounds of whole milk
10.0 pounds of skim milk

Mr. Peterson feels that to make the raising of a veal calf profitable, he should receive $7 for his labor.

From the above, you would advise Mr. Peterson that:

....1. He should kill calf number two at birth.
....2. The calves will cost $8.60 each to raise.
....3. He should destroy all of the calves.
....4. The calves should be sold at eight weeks of age.
....5. He should sell the calves as steers.
....6. Calf number one will leave a margin of $5.51.
....7. The calves will cost a total of $32 to raise.
....8. Calf number four will make the most economical gains.
....9. The large item of cost is the skim milk which is fed to these calves.
...10. Calf number two will cost $15.36 to raise.

The development of questions based on situations from real life to which the students must apply the fundamental facts and principles taught in the course is an important field for research study today. The principal criticism of objective examinations has been that they are encouragers of rote learning. In the type of question suggested above lies the remedy of the criticism. The University Examination Research programs thruout the nation are largely concerned with the construction of questions of this type and others which will test the ability of students to apply their knowledge.

The examples which have been given are by no means the only types of questions which are being used, nor are they necessarily the best. The use of new types of questions which have not been proved discriminating and reliable should not play too important a part in the examination until the instructor has subjected that type of question to statistical analysis and has proved them useful.

The discussion of the analysis of the test items would require more time and space than this paper permits. There are, however, a number of good publications available which give detailed explanation of the statistical analysis of examinations and individual examination items.

It has been the purpose of the author to give the reader a renewed interest in the field of testing and to stimulate the use of well-constructed objective variety of test questions. Teachers will find the problem of preparing good questions not only interesting, but also a stimulating influence in the improvement of learning on the part of their students.

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