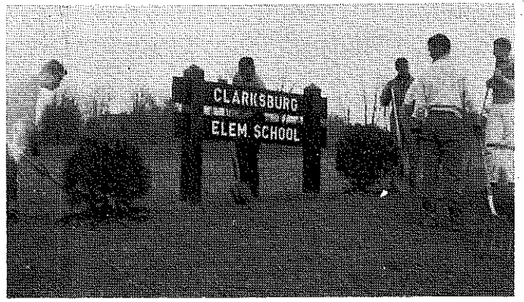
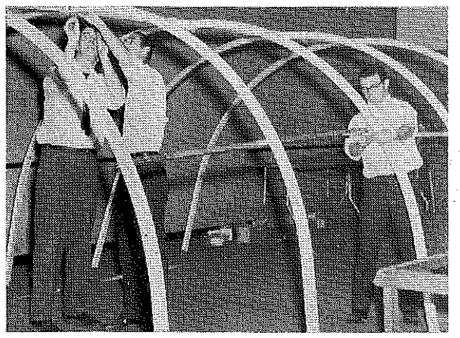
Stories In Pictures

GILBERT S. GUILER
Ohio State University

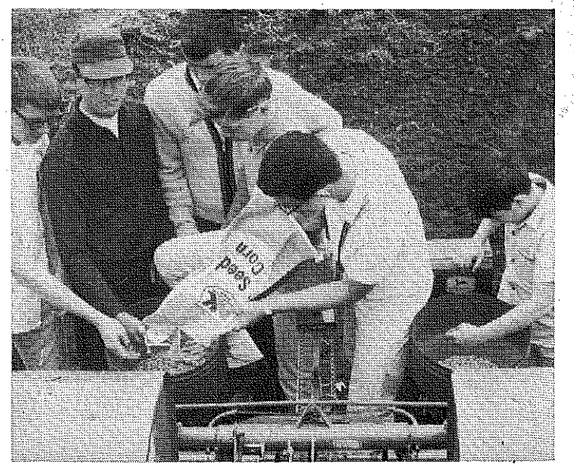


Gaithersburg, Maryland Vocational Agr. students complete a landscaping unit and planting arborvitae on the school grounds.
photo—J. Pope

Michigan Vo-Ag teachers learn cherry tree propagation facts for mechanical harvesting as a part of a recent seminar. photo by Timmons



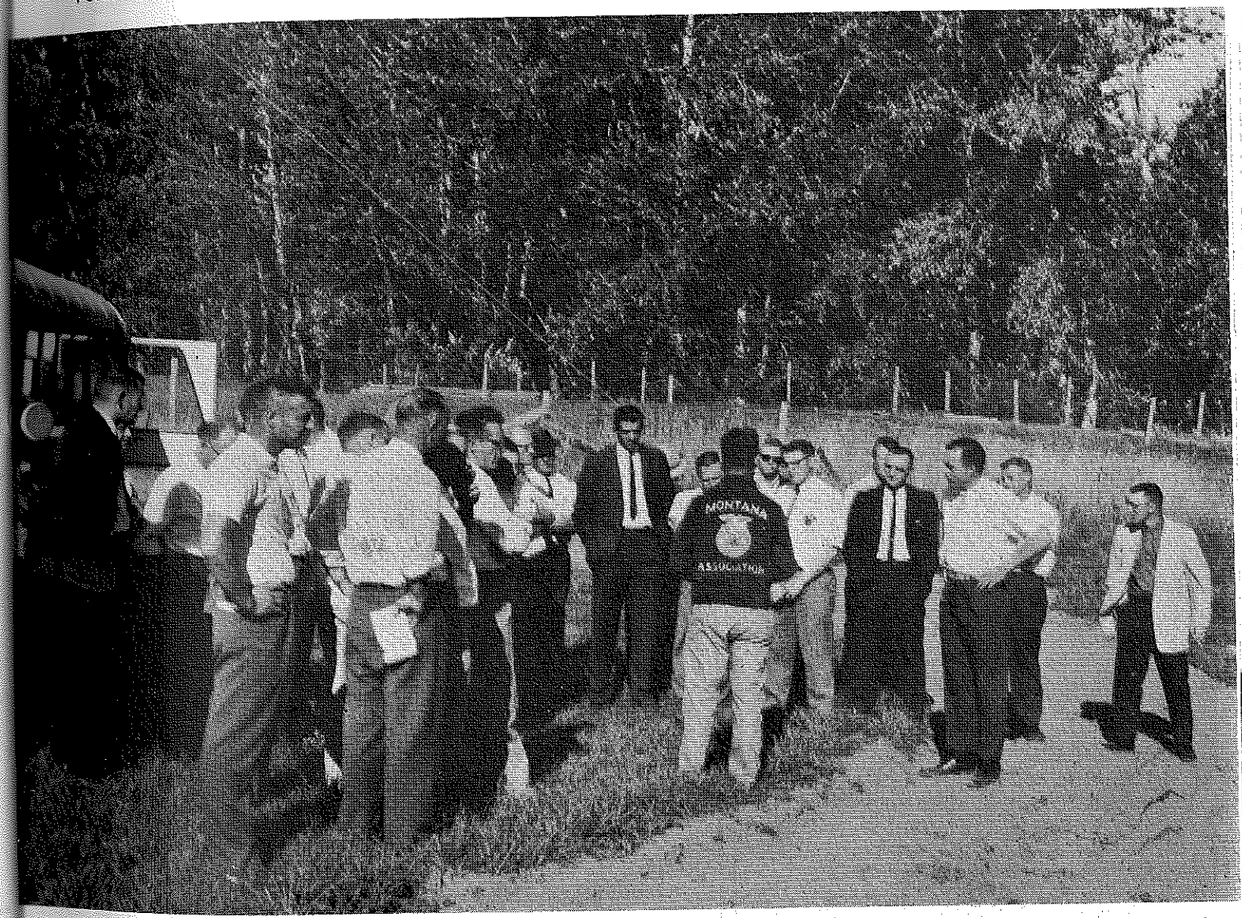
Rhode Island teachers of Agriculture are shown erecting the frame for a plastic greenhouse at their Annual Convention. The completed exhibit effectively pointed out the rapidly increasing importance of plant science in the agricultural education program of the Northeast. Left to Right: John T. Leyden, Scituate High School, Scituate; John H. Ball and Albert Christopher (student-teacher), Coventry High School, Coventry,



Voc. Agr. students of Mapleton, Minnesota are putting classroom instruction

Agricultural Education

Volume 38 June, 1966 Number 12



Montana Vocational Agriculture teachers and supervisors evaluate the total program of Vocational Agriculture in a community.

Featuring—

EVALUATING THE YEAR'S WORK

The professional journal of Agricultural Education. A monthly publication managed by an Editorial Board and published by Interstate Printers and Publishers, Danville, Illinois.

EDITING-MANAGING BOARD

Orville Thompson, California, *Chairman;* David R. McClay, Pennsylvania, *Vice-Chairman;* R. J. Agan, Kansas; George Hurt, Texas; Jim Durkee, Wyoming; H. N. Hunsicker, Washington, D. C.; R. W. Montgomery, Alabama; James Wall, Nebraska; T. L. Faulkner, Alabama; Ralph J. Woodin, Ohio; Cayce Scarborough, North Carolina.

MANAGING EDITORS

Cayce Scarborough, North Carolina State University, Raleigh, Editor
Ralph J. Woodin, Ohio State University, Columbus, Consulting Editor
T. L. Faulkner, State Department of Education, Montgomery, Alabama, Business Manager

SPECIAL EDITORS

REGION I
Cola D. Watson, State Department of Education, Montpelier, Vermont
REGION II
Gene M. Love, Pennsylvania State University, University Park
REGION III
V. Ray Cardozier, University of Maryland, College Park
REGION IV
George W. Wiegers, University of Tennessee, Knoxville
Howard W. Green, Auburn University, Auburn, Alabama
REGION V
James Hensel, Ohio State University, Columbus
Harold Engelking, State Department of Education, Springfield, Illinois
REGION VI
Raymond Agan, Kansas State University, Manhattan
Carl M. Humphrey, State Department of Education, Jefferson City, Missouri
REGION VII
James C. Atherton, University of Louisiana, Baton Rouge
James D. McComas, New Mexico State University, University Park
REGION VIII
Dwight Kindschy, University of Idaho, Moscow, Idaho
Max Amberson, State Dept. of Public Instruction, Helena, Montana
REGION IX
E. M. Juergenson, University of California, Davis

AT LARGE

Teachers—James Wall, Box 4498, Lincoln, Nebraska
Book Reviews—Raymond Clark, Michigan State University, East Lansing
Research—Earl Carpenter, University of Missouri, Columbia
U. S. Office—H. N. Hunsicker, U. S. Office of Education, Washington, D. C.
Personals—M. G. McCreight, Agricultural Education, University of Nebraska, Lincoln
Pictures—Gilbert S. Guiler, Ohio State University, Columbus

Subscription price, $3.00 per year, payable at the office of the Interstate Printers and Publishers, 19-27 N. Jackson St., Danville, Illinois. Foreign subscriptions, $3.25. Single copies, 35 cents. In submitting subscriptions, designate by appropriate symbols new subscribers, renewals and changes in address.
Articles and pictures should be sent to appropriate Special Editors or to the Editor. No advertising is accepted.
Second-class postage paid at Danville, Illinois.

The Agricultural Education Magazine

Volume 38 June, 1966 Number 12

TABLE OF CONTENTS

Editorials

Evaluating Is Not Easy

Much has been written in educational books and magazines about the importance of evaluation as part of any educational program. Many approaches are suggested. Evaluation may vary in scope from a single incident or a class session, to that of looking at the entire school program, such as done by the accrediting associations.

Some writers point out that there is a difference in measurement and evaluation, usually suggesting that the latter is a more comprehensive and broader term. However, some degree of measurement is involved in evaluation. This necessity of some sort of norm for evaluative purposes sets up one of the basic and continuing dilemmas in evaluation. That is, if you do not wish to use a "measuring stick," what will be used as a means of seeing what has been accomplished, what progress has been made, present status, or whatever is of major concern in the evaluation?

How do we solve the dilemma? Well, perhaps the nearest that we can come to a solution is to be as certain as we can that we have the most appropriate approach for our particular evaluation. If the major aim is to measure progress toward a specific goal from a certain point in time, then this can be readily done—if planned in advance so that pre- and -after information can be secured. So, some measuring stick would be needed to do the job. The degree of validity of such measuring devices has usually been established.

The other horn of the dilemma is not so easily handled. Suppose that you want to take a much broader look at evaluating an educational program. That is, you do not have a preconceived notion of "what should be" found in the situation. For example, suppose that you want to know how well a school system is meeting the needs of the students in the area of vocational education—without reference to the "standards" of certain vocational education programs. Perhaps the key here would be the pragmatic test of how well the students are really satisfied with their vocational education and how well it is serving the purpose for which each person enrolled in the program. This is an "open-ended" approach compared with the measuring stick approach. Even here, there must be some pretty well defined concept of "what should be."

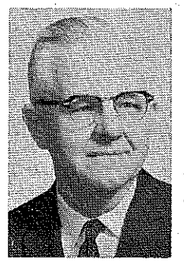
Who should do the evaluating? Some research indicates that persons closely associated with the establishment and development of an educational program usually do *not* make an effective evaluator. This has probably been observed on many occasions. Apparently if we are closely associated with the program we have so much self-interest invested until we cannot be objective enough to make an effective evaluation. What does this say to the teacher of vocational agriculture? To the supervisor, especially the district supervisor? The teacher educators? Maybe we are not as good at evaluating programs of vocational agriculture as we think.

Institutionalization

This long word is often a major barrier in evaluating vocational agriculture programs. That is, we tend to see some of our programs as "sacred cows," not to be disturbed, no matter what. The underlying difficulty of an institutionalized program is that we find ourselves *defending* rather than evaluating. We become conservatives and defenders of the status quo. This is not a peculiarity of people in Agricultural Education, it is a normal and expected condition to defend an institution. This is why the institutionalization of an idea becomes a major barrier in making needed changes.

(Continued, page 268)

Theory *and* Practice



Cayce Scarborough

An unusual method of communication with other teachers is being used by J. D. Hardeman, Cullman, Alabama. His letter begins like this. "This is a form letter I am sending to a few agriculture teachers over the nation. I am not working for a degree nor credit of any kind. I am merely trying to broaden my knowledge of agriculture and enrich my teaching experience." Then J. D. gives information about his town and the trends in Alabama agriculture. Do other teachers have similar ideas?

Another means of local communication is a monthly printed newspaper by the Danforth FFA Chapter, Charleston, Missouri. With an editorial staff, including a photographer, this is a slick-paper job with pictures and cartoons, it is called *The Agriculturists*. I wonder how many FFA chapters publish a newsletter or paper. Chapter Adviser at Charleston is Thomas K. Shotwell. Did you see his prize-winning letter in April on "What I Expect from My Professional Magazine?"

The *Employment Service Review*, published monthly by the U.S. Department of Labor carried a feature article, "The Area Counselor Serves Rural Youth." No mention is made of any role by the teacher of vocational agriculture—past, present, or future. Why?

Proper role and emphasis in research seem to be of considerable concern as we spend more time and effort in the area of research. Doug Towne, Cornell, discussed the question of sophisticated research in his Guest Editorial in the March *Ag Ed Magazine*. On the question of needs and emphasis, Glenn Stevens, Penn State suggests

(Continued, page 268)

Theory & Practices

(Continued from page 267)

that the testing of hypotheses is far more generally needed than is estimation in sampling, for example.

If you are not receiving *The Farm Index,* I believe that you would like to read it regularly. In "The Border of Boom," (Nov. '65) it is pointed out that the decrease in farm numbers is coming from those below $10,000 gross sales, while those having higher gross sales are increasing. You can get this USDA (ERS) publication free by sending your name and address to Mr. Theodore Crane, Editor, *The Farm Index,* OMS, USDA, Room 1459, Washington, D.C. 20250

Timely Tips. Schedule yourself a 1-man conference to go over the ups and downs of the past year, making notes of *changes* to be made for 1966-67, assigning some priority and a spot in the calendar and schedule to get them done. If we are too busy to do this then we are too busy.

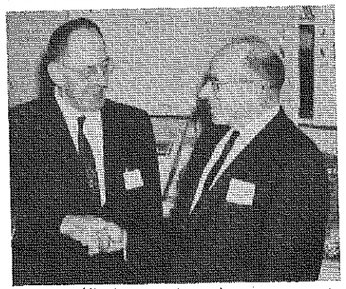
Best wishes for the summer months.

Cayce Scarborough

NEW AND VIEWS

Announcement is expected soon that other Regional Representatives for Agricultural Education for the U.S. Office of Education have been named. Only three regions now have such representatives. Malcolm Gaar, Atlanta; Jesse Taft, Boston; and Homer Edwards, Chicago.

J. O. Sanders, Associate Supervisor and Executive Secretary FFA, New York, retired January 1. He is shown here receiving congratulations and best wishes from Leonard Grubel, past president of NYVATA.



Institutionalization

(Continued from page 267)

Institutionalization becomes a major barrier in evaluating because we usually do not include the "institution itself" in our evaluation. We assume that *the institution* is good, and go on from there. For example, take two widely differing phases of most every vocational agriculture program, the shop and the FFA. Although the FFA is much more of an institution (constitution, rituals, uniforms, etc) the shop has also become an institution in many programs. In evaluating, do we ask whether the shop or FFA is *really necessary?* It has been suggested that you cannot begin to give the major purpose of a program unless you ask yourself what it would be like *without* the program. Then you can begin listing major purposes being served by the program. Evaluation of how well the program is meeting these educational purposes then becomes fairly easily done.

One characteristic mark of modern times is said to be a lack of respect for the old institutions. This seems to be the case on college campuses as well as elsewhere. Among the casualties of this situation are the college clubs and other organizations. Many are dying from lack of support and interest. Some honorary groups are having difficulty filling their quotas of membership. Nobody goes to the traditional barn-warming. Some campus clubs known to have been meeting once a week for many years have disbanded or settled for a council or some other means of staying alive. Apparently, people of today have things to do that they consider more important than keeping an institutionalized organization going.

It is my belief that we need to be certain that we *do* include *all* areas of vocational agriculture in our evaluation, especially those phases of the program that have become "set in their ways" through institutionalization. A key question to ask to get an indication of the degree of institutionalization of a program is, "How much time and effort does it take to keep the organization or program functioning?" Then follow with the question, "Can this amount of time be justfied in view of other responsibilities?"

Letters to Editor

Dear Mr. Scarborough:

I would like to submit these thoughts on, "What I expect from my Professional Magazine."

I expect to contribute something to my Professional Magazine, the giver is also a receiver.

My Magazine should be forward looking, so that it will serve as a guide for the future in Agricultural Education.

My Magazine should give me the lift to shift me from the launching pad to constructive accomplishment.

Lastly may the Magazine always retain some of the old flavor of letters and poems to make you want to read it for its entire body of human thoughts.

The *Agricultural Education Magazine* has been my favorite Magazine for thirty three years and it is an inspiration to me whenever the new issue arrives.

Wishing you and your staff continued success, I am,

Yours Very Truly,
Werner W. Stegemann
Vocational Agriculture Teacher
Wabasha, Minnesota

Editor's Note

O.K. Werner, but that's a big order!

Dear Mr. Scarborough,

It has been interesting to read your nice editorial, "Work Experience For What?" I am sure that others have experienced this type of activity creeping into our vocational agriculture programs.

Some time ago, some of us used "labor" as a term, for the lack, probably, of a better name, for these work experience projects. We too had regular space in our project books, regular business agreements, journal entries, summaries, and also used this information as supplemental material for state farmer candidate consideration.

This type of thing was frowned at by agricultural personnel including teachers, state supervisors, and teacher trainers, but as opinions change and as programs progress, there seems to be a tendency for a change in attitudes. Although the pioneer of a concept usually is forgotten, any advancement which makes for a better teaching program for a boy in commendable.

Please continue to present controversial factual materials.

Sincerely,
Donald Kabler, VoAg Teacher
Halfway, Oregon

Evaluating the Year's Work

C. W. CRAWFORD, Vo Ag Teacher, Millry, Alabama

C. W. Crawford

No doubt all Vocational Agriculture instructors have procedures by which they evaluate their vocational agriculture programs each year. These procedures provide teachers with fairly conclusive evaluations.

Evaluation is a continuous process wherein we determine how well we are doing what we are trying to do. Program evaluation in vocational agriculture is inevitable. If we don't evaluate, someone else will. With the rapid changes occuring in agriculture and education, planning for evaluation is an aid to the improvement of instructional programs in vocational agriculture. We must evaluate to keep up-to-date with the agricultural technology changes. We must evaluate our students to determine if they are carrying out the practices that they are being taught in the classroom and laboratories.

We would also determine what progress is being made in the community in pastures, beef herds, swine herds, forestry, home beautification and participation of enrollee in community activities.

Balance Needed

A teacher should keep in mind at all time when evaluating the year's work that the degree of success with which a department of vocational agriculture serves the members of its community is probably more dependent upon the 'balance' of its organization than any other single factor. This essential balance can be attained only by the placing of emphasis upon a total program of vocational agriculture in direct proportion to essential needs existing in each individual area. This balance can be maintained only by frequent, if not constant, evaluation of the instructional program.

If we evaluate continuously, then our evaluation becomes informal. Each year the vocational agriculture teachers in my county meet together and evaluate our programs. An analysis of what the other departments have accomplished during the past year provides some assistance to each teacher in his own program evaluation. The form shown here has been very helpful in evaluating our programs.

EVALUATING THE YEARS WORK

1966 1967 1968 1969 1970

A. *ALL DAY BOYS*

1. Get every eligible boy in Agriculture class.
2. All students have the minimum project program
   a. 2 Productive Projects
   b. 4 Improvement Projects
   c. 4 Supplementary Practices
3. 30 boys to follow Experiment Station Recommendations.
4. 25 boys to increase corn yield.
5. Boys establish 50 acres permanent pasture.
6. 10 boys raising purebred hogs.
7. 5 boys starting in beef cattle farming.
8. All boys keep accurate records.
9. 5 boys to establish farm shops.
10. 25 boys to establish farm librarys.

B. *ADULT AND YOUNG FARMERS*

1. Have one adult and one young farmer class.
2. Encourage leadership by using farmers on the program.
3. Get 5 purebred boars in the community.
4. 10 farmers to improve beef herds.
5. 100 acres of permanent pasture established.
6. 25 farmers to follow Experiment Station recommendations.
7. 25,000 pine seedlings planted by adult and young farmers.
8. Assist farmers in beautifying their home grounds.

C. *F.F.A.*

1. All boys in Agriculture an FFA Member
2. Advance members to next degree as soon as eligible.
3. Have definite meeting time with planned program.
4. All boys with corn projects enter corn growing contest.
5. Each boy take part in one State sponsored contest.
6. Sponsor at least one community cooperative program.

D. *DEPARTMENTAL IMPROVEMENT*

1. Keep building and equipment in good state of repair.
2. Add to reference library as much as possible.
3. Secure more tools for the Farm Mechanics shop.
4. Improve grounds around the building.

Evaluation-Teacher Rating By Pupils

N. K. QUARLES, Teacher Education, East Texas State University

N. K. Quarles

Evaluation is a process of determining the values of an enterprise. When used properly, it can and should measure growth. It has been used for ages by the teacher to measure the growth and improvement of his pupils. Many times this evaluation has been made on written tests. These tests should be a part of the total process—but not the end result. There are many more things that must be considered to achieve the desired results.

EVALUATING TEACHERS

Just as work of the students must be evaluated, so must the work of teachers be evaluated. The teacher doesn't get a report card every six weeks, but he is being continuously evaluated by school administration, pupils, parents and many others in the school and community. The criteria used is sometime good and sometime bad, but, nevertheless, it goes on just the same. Fair and impartial evaluation should be regarded by the teacher as an opportunity and challenge to personal and professional growth.

PUPILS EVALUATE

If a pupil is to evaluate the teacher, he should be encouraged to use an acceptable form for checking his answers. He should be instructed that as one means of providing the teacher with information regarding his reaction to the instruction that the student must check the descriptive phrase which, in his judgment, most accurately answers the question. It should be stressed that the student *does not sign his name*. Also, unless he gives his fair and honest opinion, the evaluation will be worthless.

THE CRITERIA

Many methods may be used for the pupils evaluation of instruction. One that has been used effectively by the author and other teachers at East Texas State Uni-

1. To what extent does this instructor stimulate intellectual curiosity?
   To an exceptional extent _____ To a slight extent _____
   To a great extent _____ Not at all _____
   To a reasonable extent _____

2. Does this instructor show interest in the subject matter?
   Unusual interest _____ Little interest _____
   More than average interest _____ Not interested _____

3. What is your reaction to this instructor's speech?
   Exceptionally distinct and pleasant _____ Not always clear and pleasant _____
   Very clear and pleasant _____ Fairly clear and pleasant _____

4. To what extent does this instructor create student interest?
   Always arouses keen interest _____ Rarely arouses interest _____
   Usually arouses interest _____ Never arouses interest _____
   Arouses some interest _____

5. How well do you feel this instructor organizes his course?
   Exceptionally well organized _____ Fairly well organized _____
   Very well organized _____ Poorly organized _____
   No organization at all _____

6. To what extent does this instructor show tolerance?
   Always respects student attitudes _____ Shows little respect for student attitudes _____
   Usually respects student attitudes _____ Is intolerant towards student attitudes _____
   Shows some respect for student attitudes _____

7. How well does this instructor present the course content?
   With exceptional clearness and enthusiasm _____ Not always clear and enthusiastic _____
   With unusual clearness and enthusiasm _____ Confused and unenthusiastic _____

8. How effectively does this instructor challenge thought and discussion?
   Exceptionally effective _____ Not very effective _____
   Greatly effective _____ Ineffective _____
   Reasonably effective _____

9. In your judgement does this instructor seem to have a thorough knowledge of this and related fields?
   Greatly enriches course with relevant material from other fields _____
   Generally introduces material from other fields _____
   Introduces some material from other fields _____
   Rarely adds to course material _____
   Teaches from textbook only _____

10. Does this instructor exercise "humor" effectively?
    With extraordinary success _____ With little success _____
    With great success _____ No humor _____
    With fair success _____

11. To what extent do examinations stimulate thinking?
    Require sound thinking _____ Require little thought _____
    Require much thought _____ Require only recall _____
    Require some thought _____

12. What is your reaction to this instructor's grading system?
    Very fair and readily understood _____ Not always fair and understandable _____
    Fair and readily understood _____ Unfair and confused _____
    Reasonably fair and understandable _____

(Continued on next page)

Follow-Up Study Indicates VO-AG Training Is Valuable

B. C. BASS

Teacher Education, Virginia Polytechnic Institute

B. C. Bass

Knowledge of what occupations former students enter after they leave school can help establish the value of the training provided in vocational agriculture and provide guidelines for planning instructional programs to fit the needs of students who are still in high school. This line of thinking prompted J. M. Campbell, State Supervisor of Agricultural Educaton in Virginia, to assemble and analyze during 1965-66 occupational data pertaining to students who completed three or more years of vocational agriculture and who were graduated from or left high schools in Virginia during the fiscal year ending June 30, 1965. The occupational status of 1968 former students of vocational agriculture was studied. (See Table I).

TABLE I

Summary of Occupational Status as of October 1, 1965, of Students in Virginia Who Completed Three or More Years of Vocational Agriculture and Who Were Graduated From or Left School During The Fiscal Year Ending June 30, 1965

		Number	Percent
1.	Total former vocational agriculture students	1968	100.00
2.	Former students not available for placement:		
	a. In the armed services	245	12.44
	b. In full-time school (college or other)	431	21.90
	c. All other reasons	54	2.74
	d. Total not available for placement (add a, b, and c)	730	37.09
3.	Former students employed or available for employment (subtract item 2d from item 1)	1238	62.90
4.	Former students employed full time:		
	a. In farming	314	25.36
	b. In other agricultural occupations	178	14.37
	c. In occupations related to training in Voc. Agric.	405	32.71
	d. In occupations not related to training in Voc. Agric.	282	22.77
	e. Total employed full time (add a, b, c, and d)	1179	95.23
5.	Former students employed part time	22	1.77
6.	Former students unemployed	25	2.01
7.	Former students whose occupational status was unknown	12	0.90

The Findings

One-eighth (12.44 per cent) of the former students were in the armed services; more than one-fifth (21.90 per cent) were in school (college or other) full time; and, for other reasons, 2.74 per cent were not available for placement. This makes a total of 37.09 per cent of the former students who were not available for placement and 62.91 per cent who were employed or available for employment.

Of the 1238 former vocational agriculture students who were employed or available for placement, more than one-fourth (25.36 per cent) were farming; one-seventh (14.37 per cent) were employed in other agricultural occupations; one-third (32.71 per cent) were employed in occupations related to the training they had received in vocational agriculture; and less than one-fourth (22.77 per cent) were employed in occupations not related to the training they had received in vocational agriculture. A total of 95.23 per cent of those

(Continued, page 275)

N. K. Quarles

(Continued from 270)

13. Does this instructor make effective assignments?
    Very clear, reasonable and integrated always _____ Not always clear and reasonable _____
    Generally clear, reasonable and integrated _____ Confused, unreasonable, no integration _____
    Clear and reasonable _____

14. Does this instructor seem to have a well-adjusted personality?
    Has usually poise and self-confidence _____
    Has unusual poise and self-confidence _____
    Has poise and self-confidence _____
    Sometimes lacks poise and self-confidence _____
    Lacks poise and self-confidence _____

15. What is your reaction to this instructor as a person?
    Always shows friendly interest _____ Rarely shows interest _____
    Generally shows friendly interest _____ Disinterested _____
    Shows some interest _____

16. How does this instructor compare with all instructors you have had?
    Most effective of all _____ Less effective than most _____
    Just as effective as any _____ Least effective of any _____
    More effective than most _____

On the back of the sheet the student is asked to make any comments which he feels will assist the instructor to improve his teaching.

CONCLUSIONS

The teacher's instruction needs to be evaluated periodically just as the pupils work needs evaluation. Students can help the teacher measure his growth and make improvement in his instruction if they are given the opportunity to do so. Do we want the truth about ourselves? If so, let's get the opinions of students as well as the opinion of administrators and others. Then, when we get the answers, let's make the necessary steps to become better teachers each year.

The Professional Personnel Recruitment Committee for Agricultural Education at their meeting in Columbus on February 25, finalized plans for a nationwide effort. Members of the committee, first row: Ralph J. Woodin, Walter L. Bomeli, Wenroy Smith. Second row: C. C. Eustace, M. M. Botto, Lowery Davis.

Teachers Key Men In Recruitment Drive

RALPH J. WOODIN, Teacher Education

The Ohio State University

Every vo ag teacher in the nation is being asked to help interest capable high school students in careers in Agricultural Education this spring.

Anticipating a shortage of teachers of vocational agriculture, the executive committee of the Agricultural Division of the American Vocational Association appointed a committee on Professional Personnel Recruitment in July of 1965. This committee includes: Walter Bomeli, Past President, NVATA, Bangor, Michigan; M. M. Botto, State Supervisor, Frankfort, Kentucky; Dr. Lowery H. Davis, Department of Agricultural Education, Clemson, South Carolina; C. C. Eustace, State Supervisor, Topeka, Kansas; Wenroy Smith, Past President of NVATA, Saltzburg, Pennsylvania; and the writer who is Chairman of the Committee. The committee has studied the situation, tried to diagnose causes

TEACHERS NEEDED BY 1969

Last September a study was made of the number and kinds of replacements which would be needed during the next three years. This survey, which included every state, showed that 1003 persons entered vo ag positions last year indicating a turnover of about 9.5%. One hundred and twenty teachers were still needed but unavailable September 1. Of 1038 Agricultural Education majors qualified in 1965, only 671 or 64.6% entered teaching, an indication of the strong demand for these men in other agriculture fields. Figures from the U. S. Office of Education show that the number of Agricultural Education majors preparing for teaching in the nation had declined every year since 1961. The number dropped from 759 in 1961 to 691 in 1964-65.

Supervisors estimate that the number of new positions will rise from 1003 in 1965 to 1471 in 1968-69. They also indicated that these teachers would be required for different types of teaching positions. Thirty-nine percent would be teaching production agriculture to high school students, young farmers and adults. Twenty-three percent would be teaching for off-farm agricultural occupations.

(Continued on next page)

ESTIMATED NUMBER OF NEW OR ADDITIONAL POSITIONS IN TEACHING VOCATIONAL AGRICULTURE TO BECOME AVAILABLE 1966 THROUGH 1969

KIND OF POSITION	NUMBER OF POSITIONS 1966-67	1967-68	1968-69	TOTAL
Teachers of Production Agriculture High School ONLY	79	78	75	232
Teachers of Production Agriculture High School plus Adult and/or Young Farmers	395	427	449	1271
Teachers of Disadvantaged Youth in Agriculture—High School	58	60	67	185
Teachers of Off-Farm Agricultural Occupations—High School	256	307	333	896
Teachers of Off-Farm Agricultural Occupations—Post High School	117	160	184	461
Teachers of Adult Farmers or Young Farmers ONLY	79	113	134	326
Teachers of Agricultural Technicians Post High School	85	101	138	324
Teachers of Manpower Training in Agriculture	70	66	71	207
Other	15	17	20	52
	1154	1329	1471	3954

GOOD RECORD OF EMPLOYMENT

E. M. JUERGENSON, University of California, Davis

E. M. Jurgensen

Employability has in recent years been the watchword and one of the most significant evaluative criteria for measuring the success of vocational programs. This is certainly a desirable measurement, as one of the major purposes of vocational education is preparing persons who are economically self-sufficient and able to seek, find, and stay employed in an occupation. Lately this factor has become so important that national, political and economic efforts pointed in this direction have been intensified.

Throughout the history of vocational agriculture, people involved in it have been of the opinion that the field is doing at least its fair share of meeting the goal of employability for persons in agriculture. Many studies indicate that this assumption is true. In Kentucky a survey[1] revealed that only a little more than 1 per cent of the vocational agriculture students in that state were unemployed 6 months after graduation. Other studies[2] reveal similar findings. When this is compared to the national average unemployment rate of 15 to 18 per cent for the age group just out of high school, it is a testimonial to the quality of instruction which these students are receiving in their classrooms and supervised practice work. However, the question arises as to how general these findings are and whether or not the implications can be duplicated in every state.

With this concern in mind an investigation was made by E. M. Juergenson of the Department of Agricultural Education, University of California, Davis, in a number of Northern California high schools used for preparing teachers of agriculture. Sixteen schools were asked to cooperate in an occupational status survey of graduates of their vocational agriculture departments for the past 5 years. Schools were asked to distribute forms on a mail out basis to those students who took agriculture, and then to follow up those who did not respond.

Schools were asked to collect basic data, and the Department of Agricultural Education, University of California, Davis, would analyze the results. All schools agreed that the study was valuable and indicated a desire to participate, but only 7 schools actively cooperated in the study.

The major question for which an answer was sought was whether or not students who had taken vocational agriculture in high school were currently employed; however, additional pertinent information was also obtained, as the survey summary indicates.

The most significant finding, and contrary to evidence reported in most states, was that 25 of the 168 persons answering this question were not currently employed. This represents 14.8 per cent, which is no better than the national average. Students are not included in the unemployed.

A summarization of the answers to the question, "Are you currently employed?" is indicated in Table 1 (next page). Per cent of unemployment was consistent between schools; no extreme was altering the percentage at either end.

A larger group was in farming than in related agricultural occupations, which to a degree is somewhat startling when one considers that only 6 per cent of the population in California is in production agriculture and the opportunities to enter the related fields are much greater. Equally significant is the number of persons in nonagriculture; this figure is almost the same as for the field of related agriculture. One would assume that students taking vocational agriculture would seek employment in

(Continued, page 274)

[1]Editorial by Ben A. Burns, Newsletter Editor, Kentucky Vo-Ag Teachers Association, September, 1964.

[2]*Ohio—Graduate Follow-up Study of Vocational Education Graduates*, Bureau of Agricultural Education, State Department of Education, Columbus. 1958-63. Edington & Hill. *Occupational Status of Oklahoma High School Vocational Agriculture Graduates 1959 to 1963*. Oklahoma State Board of Vocational Education. 1964.

Recruitment

(Continued from 272)

Eight percent would be teaching agricultural technicians, 5% teaching disadvantaged youth and 18% would be teaching in other specialized areas. Further details are shown in the accompanying table. The committee also found considerable variation among states in the type of recruitment effort which had been expanded and many promising procedures were identified.

ASSISTANCE FOR TEACHERS

The committee recognizes the teacher of vocational agriculture as the key man in any effort to attract capable young men into the profession. Plans were therefore made to acquaint every teacher in the nation with the need for recruitment and to provide him with some materials which might assist him in this effort. As a first step, each state was asked to organize a Commission for Recruitment in Agricultural Education as a part of the state teachers association. These commissions are to develop coordinated recruitment programs for each state.

Through the cooperation of two national agricultural firms, printed materials including a bulletin board poster have been prepared and are being sent to each teacher of vocational agriculture.

Plans for recognizing "Teachers of Teachers" through a special certificate to be presented at this year's summer conferences is another part of the plan. The committee believes that if all of these efforts are carried out in cooperation with others engaged in recruitment for the college of agriculture that an adequate supply of teachers can be obtained.

E. M. Juergenson

(Continued from page 273)

the field for which they had prepared, and if employment was unavailable in that field, that they would seek a job in a related area. This assumption, however, on the basis of this research, no longer seems valid. Current occupations answers are summarized in Table 2.

Undoubtedly, many graduates of a department failed to respond to the questionnaire, so our responses are not statistically large enough to indicate trends. However, in several schools there is little difference between agriculture or non-agriculture as to the occupation entered by graduates of vocational agriculture classes. In 129 out of 153 cases, students completed 3 or 4 years of agriculture, so agriculture was definitely a major subject in school.

Vo Ag O.K.

Supporting the idea that students would take agriculture again if they were starting high school, was their reaction to the question concerning the value of agricultural classes. Regardless of whether or not students entered agriculture as a career, they were enthusiastic regarding the value of vocational agriculture classes. Only 14 students said they would not enroll in vocational agriculture if starting high school again, while 129 indicated they would.

In general, salaries were high among those reporting. No effort was made to correlate salary with occupation. Table 3 summarizes the response to current salary received (in terms of the wage brackets stipulated by the questionnaire).

Leadership Training

In answer to the question asking whether vo-ag organization and leadership training had helped in their school work, club work, and job, 91 said that it was very helpful and only 3 said it was of no value. This information is summarized in Table 4 and is a tribute to the kind of instruction taking place in the cooperating schools.

TABLE 1

SUMMARIZATION OF ANSWERS TO QUESTION "ARE YOU CURRENTLY EMPLOYED?"

School	Yes	Per cent	No	Per cent	College Student	Per cent
A	7	46.6	4	26.6	4	26.6
B	16	64.0	5	20.0	4	16.0
C	10	55.5	4	22.2	4	22.2
D	17	62.9	5	18.5	5	18.5
E	20	83.3	3	12.5	1	4.1
F	30	79.0	4	10.5	4	10.5
G	21	100.0	0	...	0	...
Total	121	72.0	25	14.8	22	13.0

TABLE 2

CURRENT OCCUPATIONS REPORTED BY VOCATIONAL AGRICULTURE STUDENTS OUT OF SCHOOL NOT MORE THAN FIVE YEARS

School	Farming	Related Agricultural Occupation	Non-Agriculture
A	2	1	2
B	8	5	3
C	2	2	2
D	5	8	2
E	1	5	6
F	14	4	9
G	10	5	4
Total	42	30	28

TABLE 3

CURRENT SALARIES REPORTED BY VOCATIONAL AGRICULTURE STUDENTS OUT OF SCHOOL NOT MORE THAN FIVE YEARS

School	0-$3,000	$3,000-$5,000	$5,000-$10,000	Above $10,000
A	2	1	4	
B	8	7	1	
C	1	2	6	1
D	5	4	4	
E	5	1	4	
F	9	6	6	5
G	8	4	6	
Total	38	25	31	6

TABLE 4

Summarization of Answers to The Question—"To what degree do you feel that the organizational and leadership training that you received in your vocational agriculture classes have helped you in your other school work, club work, and your job?"

School	Very Helpful	Of Some Help	Undecided	No Help	Hindered
A	4	7			
B	10	11	2		1
C	4	7	2		
D	11	8	2	1	
E	19	2	1		
F	24	10			
G	19	3		1	
Total	91	48	7	2	1

(Continued on next page)

E. M. Juergenson

(Continued from page 274)

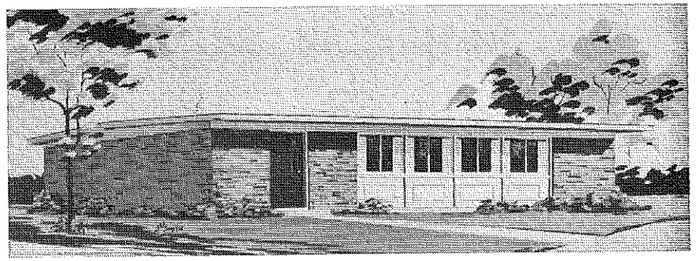
Undoubtedly the F.F.A. and its leadership opportunities played a role in developing the favorable response students gave to this question. Nevertheless, students who participate in the vocational agriculture program seem satisfied with the preparation they receive.

The study has given rise to several questions, two of which are so immediately important they they must be considered in this paper. At a time when employability and occupational status of graduates is of paramount concern, why did less than half of the schools contacted fail to avail themselves of the opportunity to find out what their graduates are doing? Many reasons could be advanced, but lack of adequate records is certainly a paramount reason. The question of proper records is going to be asked repeatedly in the future, and unless answers are available, programs can be seriously questioned. Records are imperative in getting answers to questions concerning the evaluation of a program.

Why Not Better?

Another question is, Why are students in any school with a vocational program not significantly more employable than the average of the population? Curriculum and focus of instruction will be reflected in the occupational aspirations and realizations of those participating in the program. These goals must be based on up-to-date employment opportunities and implemented by an instructional program which will make the student goals attainable.

In times of change a successful tradition can sometimes be a liability—a liability because we are loath to leave the security of the past even though all signs indicate former practices are becoming less effective. Establishment in production agriculture, once the peak of successful vocational placement, no longer can meet the need for most students. If this is true, then other avenues of placement must dictate curriculum, career counseling, teaching, and the criteria by which the success of the entire vocational program is measured.



NEW CLASSROOM DESIGNED TO ALLEVIATE NATIONWIDE SHORTAGE

A new supplemental classroom has been introduced to the school market by National Homes Corporation of Lafayette, Ind. The self-contained 24 x 32 foot building has been designed for quick production and erection in an effort to immediately alleviate the shortage of classrooms in the U. S. The classroom, priced to sell at $7,000 with seating for a minimum of 30 students, can be erected on a prepared site by four men in four hours and is easily relocatable. The classroom comes complete with air-conditioning, heating, two completely installed rest rooms, storage closet, and two cloak room areas. Also installed is fluorescent lighting, electrical wiring, hand washing basin, and drinking fountain. The schoolroom can be manufactured and delivered within 30 days.

B. C. Bass

(Continued from page 271)

employed or available for employment were employed full time and an additional 1.77 per cent were employed part-time. The employment status of twelve (0.90 per cent) of the students was unknown and 25 (2.01 per cent) of the students were unemployed.

The former students who were farming plus those employed in other agricultural occupations totaled 492, and this is one-fourth (25.00 per cent) of the 1968 included in the study. Sanders, [1] who made a follow-up study in 1959 of 76,534 former students who studied vocational agriculture one or more years in Virginia schools from 1918 through 1955, found that one-fourth (25.08 per cent) of them were farming or in occupations related to farming. He also found that somewhat higher percentages (26.58 per cent and 32.11 per cent) of those who studied vocational agriculture three and four years respectively were farming or in related occupations.

Interpretations

Because one-fourth of the former students were farming or employed in other agricultural occupations, this strongly indicates that developing the ability to make a beginning and advance in farming (one of the major objectives of vocational education in agriculture) is being accomplished to a worthwhile extent in Virginia. It is noteworthy that this is being done even though the proportion of the population engaged in farming has greatly increased in recent years.

It was found that approximately one-third (32.71 per cent) of the former students who were employed or available for employment, were employed in occupations related to the training they received in vocational agriculture.

Only two per cent of the former students were unemployed. This is far below the percentage of all workers who were unemployed at that time. This finding gives emphasis to the importance of vocational training as preparation for employment.

One-fourth of the former students who had completed three or more years of vocational agriculture were farming or employed in other agricultural occupations. This finding reveals that only a slightly smaller percentage of the students who were graduated from or left the high school in Virginia in 1965 entered these occupations than did the percentage of such students who were graduated from or left high schools in Virginia between 1918 and 1955. This means that farming and other agricultural occupations continue to attract and provide employment for a large portion of young men in Virginia who have received training in vocational agriculture.

[1] Harry W. Sanders, "A Follow-Up Study of Students of Vocational Agriculture in Virginia, 1918-1955." Non-thesis study, 1959. 14 p. Department of Vocational Education, Virginia Polytechnic Institute, Blacksburg.

More Skilled Agricultural Technicians Are Needed

WALTER J. BROOKING
Technical Education Specialist
and
H. N. HUNSICKER
Agricultural Educational Services
State Vocational Services Branch
U.S. Office of Education

The United States is pre-eminent in the world as an economical and abundant producer of the food and fiber needed for a growing population. The cost of food in the United States is less than 20 percent of the total cost of goods and services consumed by our citizens. No other nation can buy its food as cheaply, and many nations do not have enough at any price to feed their population. An average American farmer produces enough food and fiber for 30 additional people, while farmers in many other parts of the world do not produce enough even for themselves.

It is only recently being recognized, however, that our pre-eminent efficiency in agricultural production is the result of a continuing application of highly sophisticated scientific and technological skills and knowledge in an intensively competitive free enterprise environment. Agricultural production is one of this nation's largest and most vital industries. Our land, equipment, livestock, and production materials require a larger capital investment per worker than do parallel expenditures in most of our major industries. Those who manage and operate our agricultural production establishment and those who service it must be technically competent in the application of the agricultural sciences, and they must also be informed and imaginative in the managerial and business judgment skills required of modern industrial enterprises. The impact of technological development in agriculture continues to be clearly evident, and many specialists in the field believe it has only begun.

The foregoing factors all illustrate the imperative need for highly skilled, progressive, and well trained leaders and supporting [illegible] our present position of unequalled agricultural efficiency.

Agricultural Technicians: What They Do

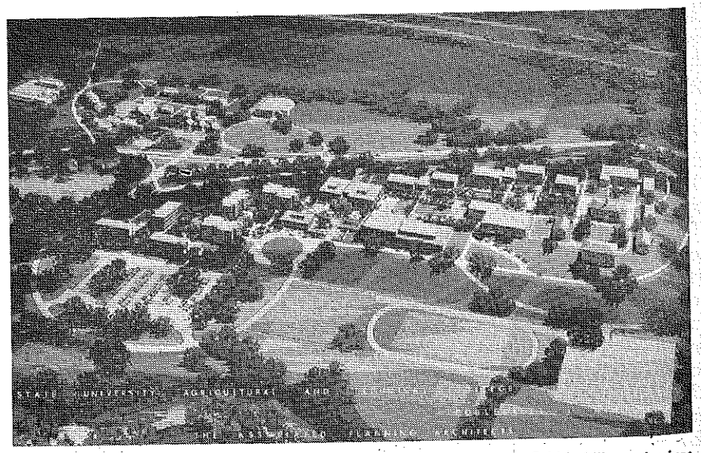
In agriculture, as in other fields, the highly skilled technician is becoming an increasingly important member of the scientific and management team in modern research, development, production, and services. The team is comprised of professional (agricultural) scientists, specially trained technicians, supervisors, and skilled production or laboratory workers.

Technicians are trained for employment in the physical science and engineering-related fields of electronics, mechanical design and control, civil and construction technology, chemistry, and metallurgy. Others enter the life science fields, including medical and dental laboratory technology and nursing, as well as agricultural production and research. More technicians are needed in the applied biological, agricultural, and allied life science technologies.

The explosion of new knowledge has caused changes in scientific education so that the recently graduated professional scientist or engineer often has had little laboratory experience, and he functions more as a theoretical scientist than in the past. Thus, there is a gap in the area of applied laboratory knowledge that was formerly the domain of the scientist or engineer, which is being increasingly filled by highly trained technicians. This is as true in the life science fields, including agriculture, as in the physical science fields. Agricultural technicians usually have mastered some applied physical science as well as applied biological sciences.

Agricultural technicians work in the following general types of activity:

A. *Research and development* in all branches of science and engineering as they are applied to agricultural problems.
B. *Production and related processing* of agricultural crops and products; also the culture and conservation of soil, forests, wildlife, grasslands, inland waters, and other agricultural resources.
C. *Distribution and servicing* of machinery and equipment, of supplies such as seed, feed, fertilizer, feeding or breeding stock, pesticides, and other sources as needed for production, processing, and marketing of farm products.



The New York State University Agricultural and Technical College at Cobbleskill emphasizes [illegible] of three major education objectives of the institution.

The problem of identifying the location, environment, and activities of the agricultural research and development scientists and technicians is, in principle, quite similar to that in any other industry.

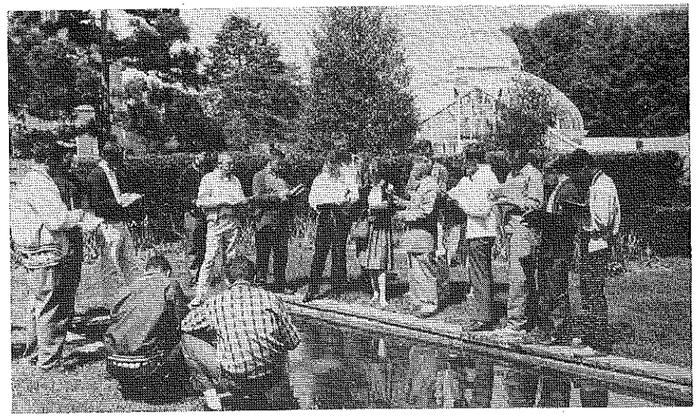
Ag. Technician Training More Difficult

The nature of the elements of education for the technician in the production of agriculture is less clearly evident than that of the training for most industrial production technicians. In a few very large farming operations, especially those which involve both producing and processing of the product before marketing, the "scientific team" structure and its elements can be identified. In smaller operations the manager and operator of the production unit (farm, orchard, greenhouse, or dairy, for example) could well be—and increasingly should be—a highly trained technician. Here he functions as manager with considerable responsibility of his own, but he more and more requires a technical background to understand and use the professional scientific direction or consultative services he must obtain from research and development center personnel, from the county agricultural agent, or from the literature of the various scientific and technical societies whose services meet his problems.

Agricultural technicians employed in the distributive and service areas excel because they can perform actual technical duties which are based on their understanding of applied agricultural science and related to the required service.

A skilled agricultural technician is a specialist in some area in the broad spectrum of applied life science, in agricultural or closely allied engineering. He has mastered an intensive and rigorous curriculum, a major part of which is in science and laboratory work oriented to his specialty. This education gives him the knowledge and competencies which enable him to excel in his area of applied agricultural or life science. Such programs usually devote 10 to 15 percent of the educational program to social sciences, emphasizing economics, business management, and human relations.

(Continued, page 278)



These grounds for landscape development, nursery study, greenhouse and other facilities for floriculture and plant propagation, and real practice at horticultural work are requisites for the ornamental horticultural technician laboratory program at the State University of New York Agricultural and Technical College at Farmingdale, New York.

ORNAMENTAL HORTICULTURE CURRICULUM

FLORICULTURE OPTION

	Hours per Week			
	Class	Laboratory	Outside Study	Total
FIRST SEMESTER				
Chemistry	3	3	6	12
Communication Skills	3	0	6	9
Mathematics	3	0	6	9
Horticulture I	2	6	4	12
Botany	3	3	6	12
	14	12	28	54
SECOND SEMESTER				
Technical Reporting	2	2	4	8
Floriculture I	1	6	2	9
Herbaceous Plants I	1	2	2	5
Wood Plants I	2	2	4	8
Horticulture II	2	6	4	12
Entomology I	3	3	6	12
	11	21	22	54
SUMMER SESSION	Studies to meet special requirements of State or Institution; and/or approximately 12 weeks of full time practice in floriculture on the job, or as provided by the college.			
THIRD SEMESTER				
Flower Shop Management I	1	3	2	6
Greenhouse Management I	2	6	4	12
Herbaceous Plants II	1	3	2	6
House & Conservatory Plants I	2	2	4	8
Industrial Organizations & Institutions	3	0	6	9
Plant Pathology	3	3	6	12
	12	17	24	53
FOURTH SEMESTER				
Flower Shop Management II	2	6	4	12
Greenhouse Management II	2	6	4	12
House & Conservatory Plants II	1	2	2	5
Salesmanship	3	0	6	9
Indoor Landscaping	1	2	2	5
Business Organization & Management	3	0	6	9
	12	16	24	52

This Floricultural Technology curriculum requires extensive laboratory facilities such as shown above.

Brooking and Hunsicker

(Continued from page 277)

In the planning of programs for educating agricultural technicians, the *agricultural* or closely related occupational competencies must be identified and made the stated objectives of the program. Vocational and technical educators must look primarily to the essentially *agriculture*-related occupational content in planning new technical programs for agriculture if they are to contribute solidly to the advancement of agricultural research, production, or related services, and to the capacity of those educated in these programs to serve and grow in the application of agricultural science and in the occupation of farming and farm management.

The following statement begins the preface to a study to determine the need and type of Training Program for Agricultural Technicians made by Dr. G. Allen Sherman, Dean of Agriculture, Mt. San Antonio College in cooperation with the Bureau of Agricultural Education and the State Department of Education in California in 1963:

> "For the casual observer it may be difficult to see the dynamic changes that have taken place in agricultural technology during the past few years. To most people these changes have not been as spectacular as those in the space field or other areas. In many cases these advances in agricultural technology have been overshadowed by farm surpluses and the adverse publicity accompanying them. Nevertheless, changes have been and are taking place at a rapid pace in agriculture.
>
> "Changes in agriculture have affected people, jobs, and farming methods, and have led to many off-the-farm activities that are an integral part of agriculture.
>
> "These changes have caused those in agriculture education to become aware of the emergence of a whole new era of responsibility—that of training young people in agriculture for more than the occupation of farming."

What Special Agricultural Technologies Should Be Taught?

The field of applied science is so broad in agriculture and its related service areas that the training of technicians for agriculture must of necessity be directed toward specialized occupational objectives. The identification of a specific area as an educational objective involves the recognition of a related body of knowledge and skills which, when mastered, will prepare the student technician to enter any one of a variety of employment opportunities in the general field of his specialty. Examples of agricultural and related technology objectives are:

- Livestock Production Technology (Cattle, Sheep, Swine, Horses)
- Dairy Technology Production and Processing
- Poultry Technology
- Farm Crop Production Technology (Field Crops, Orchards, Vineyards, Intensive Vegetable Culture)
- Ornamental Horticulture Technology (Nursery, Floriculture, Turf Management, Arboriculture, Landscape Development)
- Agricultural Production Equipment Technology
- Food Processing Technology
- Grain, Feed, Seed and Supply Technology
- Forestry Technology
- Conservation, Recreation, and Wildlife Technology
- Soil Science, Reclamation and Conservation Technology

Each of the foregoing areas is sufficiently broad to provide a graduate with a variety of employment opportunities in his segment of agricultural production or related service. Even so, each is specialized enough to allow a curriculum to cover the specific content of the applied science and related skills in sufficient depth to make the graduate technician a competent and attractive specialist in the field.

Figures 5, 6, and 7 show examples of the specialized curriculums required to educate skilled agricultural technicians in three fields. Options for landscape development, turf management, arboriculture, and nursery management provide other horticulture specialization.

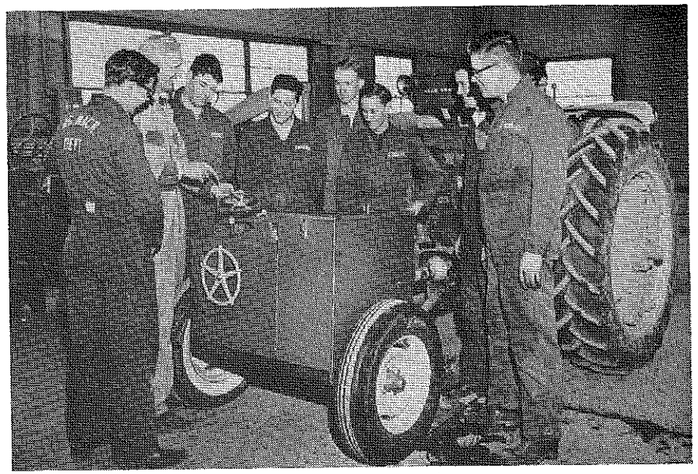
In the development of a curriculum for any of the foregoing major areas, primary emphasis should be on the underlying sciences and related technical study of procedures, processes, techniques, methods, and principles. The courses should include extensive laboratory experience and should be application oriented. Each curriculum should provide courses in mathematics to the degree necessary to support the science. It should include courses in communications and technical reporting and courses which provide pertinent understanding of the applicable principles of economics, business management and cost control, and human organizations and relationships.

FOOD PROCESSING TECHNOLOGY

CURRICULUM

	Hours per Week			
	Class	Laboratory	Outside Study	Total
FIRST SEMESTER				
Communication Skills	3	0	6	9
General Chemistry I	3	3	6	12
Microbiology	2	3	4	9
Mathematics I	3	0	6	9
Food Preservation I	3	6	6	15
	14	12	28	54
SECOND SEMESTER				
Technical Report Writing	2	3	4	9
General Chemistry II	3	3	6	12
Food Microbiology	2	3	4	9
Mathematics II	3	0	6	9
Food Preservation II	3	4	6	13
Food Grades and Standards	0	2	2	4
	13	15	28	56
THIRD SEMESTER				
General & Industrial Economics	3	0	6	9
Quantitative Procedures	2	3	4	9
Quality Control I	2	3	4	9
Food Packaging	2	3	4	9
Food Preservation III	3	4	6	13
Food Industries Seminar	2	0	4	6
	14	13	28	55
FOURTH SEMESTER				
Industrial Organizations & Institutions	3	0	6	9
Quality Control II	3	4	6	13
Food Plant & Environmental Sanitation	3	0	6	9
Food Plant Equipment	2	3	4	9
Food Preservation IV	3	4	6	13
	14	11	28	53

The specialization of this curriculum is evident by the specialty courses starting in the first



Up-to-date machinery and well equipped laboratories are necessary for this agricultural equipment application and function study—a part of an agricultural production equipment technology at Cobbleskill, New York.

Who Should Be Trained as Agricultural Technicians?

High school graduates, particularly those with farming or vocational agriculture school background, comprise a major population from which potential agriculture technicians may be drawn. The interests, educational preparation, and other important characteristics of this segment of our youth *need to be studied* to find guides for identifying good potential agricultural technicians and guiding them into such programs. Approximately 75,000 students with vocational agriculture training graduate from our high schools each year.

A large number of urban, suburban, and rural youth who have not studied vocational agriculture have interests and capabilities which make careers in agricultural production, research, or one of the many related agricultural services seem attractive. Many of these high school graduates want to work in agriculture but can't finance a start in farming and aren't employable in related occupations because of insufficient education to bring useful services to an employer.

With the increasing tendency for employers to favor the older and more mature employee, the two-year period after high school might best be used to provide useful and substantial education to youth interested in agricultural occupations. This serves the dual purpose of equipping them with saleable educational qualifications and allowing for acceptable maturity for employment.

Types of Schools Offering Technical Education

Several types of schools offer technical and related vocational education: community colleges, divisions of four-year colleges or uni-

(Continued, page 280)

AGRICULTURAL PRODUCTION EQUIPMENT TECHNOLOGY

CURRICULUM

	Hours per Week			
	Class	Laboratory	Outside Study	Total
FIRST SEMESTER				
Communications Skills	3	0	6	9
Drawing-Sketching & Diagramming	1	2	2	5
Planting & Tillage Equipment	2	6	4	12
Welding	0	4	0	4
Accounting-Agr. Equipment Bus.	3	0	6	9
Applied Mathematics	4	0	8	12
Agri. Equip. Tech. Seminar	1	0	2	3
	14	12	28	54
SECOND SEMESTER				
Technical Reporting	2	0	4	6
Lawn & Garden Equipment	2	4	4	10
Applied Physics	2	4	4	10
Farm Power I (Gas Engines)	2	4	4	10
Hydraulics I (Basic)	2	2	4	8
Agricultural Electricity	2	4	4	10
	12	18	24	54
THIRD SEMESTER				
Personal Relationships in Bus.	3	0	6	9
Advanced Welding	1	4	2	7
Elements of Farm Mechanization	2	4	4	10
Transmissions & Final Drives	2	4	4	10
Harvesting Equipment	2	4	4	10
Gen. & Industrial Economics	3	0	6	9
	13	16	26	55
FOURTH SEMESTER				
Agr. Equip. Mktg. & Serv.	2	0	4	6
Hydraulics II (Farm & Light Ind.)	2	4	4	10
Salesmanship	2	2	4	8
Farm Power II (Diesels)	2	4	4	10
Power Unit Testing & Diag.	2	4	4	10
American Institutions	3	0	6	9
	13	14	26	53

This agricultural technician educating program is an example of the extensive laboratory orientation required, and also illustrates the language skills and applied economics and social science content needed by the technician as a citizen and on the job.

Brooking and Hunsicker

(Continued from page 279)

versities, technical institutes, and area vocational-technical schools are the institutions in which the greatest growth is taking place. Technical and comprehensive high schools also offer such programs; and their orientation toward the needs of technical and related vocational education is of great importance since they must prepare students to enter technical education programs either late in high school or upon graduation from high school.

At this time, most of the highly developed and long-established programs for educating agricultural technicians are found in the technical institution, such as the State University of New York's Agricultural and Technical Colleges at Farmingdale, Delhi, Canton, Morrisville, Cobleskill and Alfred and other such schools in various States. There are indications, however, that it is in the community colleges throughout the nation that the greatest growth of agricultural technician programs may occur. They represent the most rapidly growing type of educational institution in the United States.

It is to these institutions that the largest number of our high school youth probably will go for further education of any kind. It is therefore in many of these institutions that the greatest potential exists for training agricultural technicians. Such programs are now developing in community colleges, and the need for larger numbers of skilled agricultural technicians indicates promise of their substantial growth.

Divisions of four-year colleges with agricultural programs also have considerable potential for developing good technician educating programs because of institutional facilities, staff, and administrative capability. Some programs have been developed and are operating in such institutions.

Federal Support To Educate Technicians

The need for educating highly skilled technicians was recognized and supported by Federal legislation under Title VIII of the National Defense Education Act of 1958. Its purpose was to train national defense. The provisions were not generally interpreted to include agricultural technicians, but experience during the seven years since 1958 has done much to demonstrate the need for technicians in all fields of applied science, including agriculture, and to prepare the way for the initiation of agricultural technician preparatory programs.

Prior to 1958 there was a long history of Federal support to agricultural education, dating from the passage of the Smith-Hughes Act in 1917. Federal grants to the States, matched at about four dollars to one Federal dollar by State and local funds, provided a growing and important development of vocational agricultural education in the States, largely at the high school level. Each State administered its own grants to meet its needs, and the U.S. Office of Education provided cooperative consultation and assistance through the State director of vocational education. This Federal-State relationship of cooperative effort provides a strong platform for the further development of occupational education in the agricultural and related fields, especially for the development of programs for the education of agricultural technicians.

In recognition of the growing importance of educating all persons for gainful employment, the Congress enacted the Vocational Education Act of 1963, which provided substantially increased funds for vocational and technical education for greater numbers of people of all ages. Under this expanded program, increased technician training for agricultural and all life science technologies is possible and encouraged.

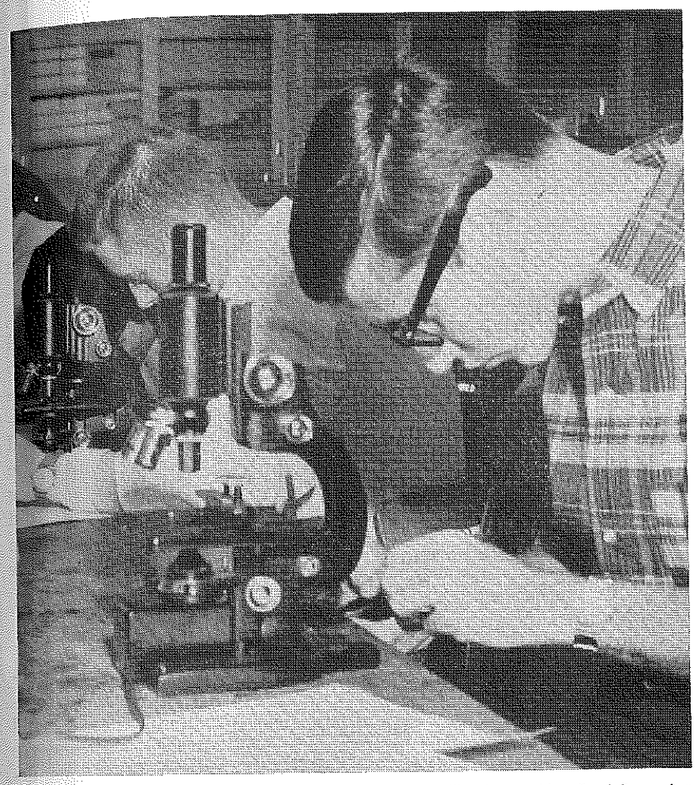
Funds under the Act of 1963 may be used under certain conditions for construction of area vocational school facilities, as well as for teacher salaries, libraries, laboratories, and equipment, and needed materials and services for educating technicians. The 1963 Act requires a dollar-for-dollar matching of Federal funds with State and/or local funds. The funds are administered by the State Board for Vocational Education in each State, following the pattern of previous legislation. Research funds for vocational and technical education were, for the first time, authorized by the Congress in the Vocational Education Act of 1963. Ten percent of all funds appropriated under the Act are designated to be used for research, demonstration, and experimental projects in the field.

In addition to the Acts discussed above, Congress enacted the Higher Education Facilities Act of 1963, authorizing $1.2 billion for construction of facilities for public and nonprofit private colleges. As amended by the Higher Education Act of 1965, an additional $290 million is authorized. Under Title I of the Act, 22 percent or $202.4 million in grants is specifically for construction of facilities for public community colleges and public technical institutes which meet the requirements specified by the Act. This clearly indicates the importance attached by the Congress to improved facilities for institutions which offer programs to train highly skilled technicians.

Special Considerations In Educating Technicians

The sequence of the courses in a two-year technical curriculum is as important as the content of the courses. In general, the subject matter in a technical curriculum is carefully correlated in groups of concurrent courses. In technical curriculums, such as the agricultural technician education programs, it is essential that specialized agricultural (technical) course work be introduced in the first term. Deferring this introduction even for one term imposes serious limitations on the effectiveness of the total curriculum. Important advantages accrue from the early introduction of the technical specialty: (1) student interest is stimulated and maintained by practical aspects of studying the specialty, whereas if the first term consists entirely of general subjects —mathematics, English, social studies—students often lose interest; (2) by introducing technical study in the first term it is possible to obtain greater depth of penetration into the agricultural subjects in the later stages of the two-year program.

The laboratories and equipment for teaching agricultural technicians must meet high standards of quality, since the objective of the program, as well as its strength, lies



The microbiology laboratory is an important part of the facility for teaching Food Processing Technology at the State University of New York Agricultural and Technical College, Morrisville, New York.

in providing valid laboratory experience which is basic in nature, broad in variety, and intensive in practical experience. Well-equipped laboratories with sufficient facilities for all students actually *do* the laboratory work are required for these courses. In the education of technicians, competency obtained by doing is required. Summer practice (employment) or cooperative work experience for the student in his field of specialization is highly desirable whenever it can be incorporated into the program.

Variety and quality of equipment and facilities are more important than quantity in equipping laboratories for teaching agriculture technicians. Such equipment and facilities are a major element of the cost of such a program.

A teacher for agricultural technician programs must be professionally competent and must be intimately acquainted in depth with the applied biological and agricultural science as it is *currently used* in his field of technical specialization.

Effective programs for educating technicians cannot be short-term or transitory. Really high quality is a mandatory requirement for successful technician education programs. A competent, trained teaching staff, laboratories well-equipped with apparatus representative of that used in the most up-to-date industrial establishments, a good library, adequate classrooms, and administrative direction sincerely dedicated to quality occupational education are essential. It takes a minimum of five years and many thousands of dollars to establish a new program, assemble the staff, equip facilities, and graduate the first class or two. When these graduates are successfully employed and confidently advertising their success to their peers and parents, the program is well started.

A poor program is by far the most expensive of all because it costs almost as many dollars, wastes the time and the effort of students and school staff; and, worst of all, disappoints potential employers, and disillusions students and their parents. *Programs of less than high quality cannot be afforded.*

To add curriculums for agricultural technician training in an institution which already offers some programs in technical education is usually less expensive than starting programs where no technical education is being offered. The life science laboratories for agriculture or for health are not greatly different; and the chemistry and physics laboratories for engineering-related technologies can be used with little or no modification other than added equipment for teaching certain of the agricultural technologies. The library and its staff already exist and need only the addition of the agriculture-related information. Staff for teaching communication skills, technical reporting and illustrating, economics, mathematics, and government and human relations are already present and can adapt to the program by slanting the courses to whatever degree is needed for agriculture technicians.

For Adult Evening Classes Too

The establishment of high quality programs for educating technicians pays an extra dividend by providing facilities for occupational up-grading programs for employed adults on a part-time or evening basis. Experience has shown that most schools which offer these programs enroll a larger number of already-employed adults in such special courses than they do full-time young people in preparatory technician curriculums.

The evident need at the present time is to improve existing programs and to start new ones where the population, the environment, and the public support and advisory committees assist and justify them. These programs will provide new opportunities and horizons for many of our most able and promising youth who need to develop saleable competencies and who want to work in agricultural occupations.

Classes Help Adults Upgrade Their Horticultural Jobs

PETER WOTOWIEC, Teacher of Vocational Horticulture
Cleveland, Ohio
and
RALPH J. WOODIN, Teacher Education, The Ohio State University

Employers in one of the nation's largest cities, strongly support adult classes in horticulture. This year over 60 workers in garden centers, golf courses, landscapers, nurseries, and metropolitan parks have attended five different vocational classes including plant pests, soils and fertilizers, equipment maintenance, turf, and landscape design in Cleveland, Ohio. The courses taught by four different teachers are based on opinions of employers of competencies needed by their workers.

Adult classes in general horticulture had been held for Clevelanders for over 25 years but it was not until the fall of 1963 that the first vocational adult classes were started. Students enrolled in these courses because they wanted to get ahead on their jobs, because their employers encouraged them to enroll or just because they found their jobs in horticulture so interesting that they wanted to know more about the industry. Students were charged a course fee of $10 each. Incidentally, about one fourth of the students fees are now paid by their employers.

County Study

To aid in the further development of adult horticulture, a study was completed in early 1965 in the Greater Cleveland area to determine educational needs of the employees of Cuyahoga County horticultural businesses.

The information for the study was gathered by interviews with a sampling of Cuyahoga County horticultural employers. The employers included those dealing with: garden equipment and supplies, nursery production, landscaping, vegetable greenhouses, floral greenhouses, golf courses, and other including landscape maintenance departments of factories, cemeteries, etc.

The study showed that there were approximately 7,500 full time and 1,900 part time horticultural employees in the Greater Cleveland area. Furthermore, employers estimated that by 1969 there would likely by 900 additional full time horticultural employees.

Knowledge Needed by Employees

The knowledge and skills needed by employees in each of the business areas studies varied to some extent but some fundamental understandings were important to most employees. For example, the most necessary areas of knowledge for employees of garden equipment and supply dealers were found to be control of insect and disease, woody plant material, and herbaceous plant materials. The most necessary skills were spraying and dusting, watering, fertilizing, and planting nursery stock. Table 1, which compares the type of knowledge needed by employees in various horticultural businesses, has served as a useful guide in developing new adult courses.

The study indicates that employees of nurseries needed a high degree of knowledge in horticultural equipment and maintenance, soils and fertilizers, and woody plant materials as well as skills in using the rotary tiller, mowing turf, and laying sod. Employees of landscaping businesses required knowledge of horticultural equipment and maintenance, insects and diseases, and landscape maintenance. Skill in fertilizing, laying sod and planting nursery stock was also needed. Employees of golf courses were found to need understanding of horticultural equipment and maintenance, turf, and landscape maintenance and skills in laying sod, soil grading and raking, and mowing turf. Similar information was secured for employees of other horticultural businesses.

Needed Adjustments

The study resulted in some modifications in adult classes in vocational horticulture in Cleveland which seem to have improved the program. Courses are now designed for specific groups of employees and the content of these courses has been influenced considerably by the findings of the study along with the expressed interests of class members. Development of the needed horticultural skills identified by the study is likewise included in each course.

(Continued on next page)

(A typical course outline is shown below.)

CLEVELAND PUBLIC SCHOOLS
COURSE OUTLINE FOR LANDSCAPE DESIGN

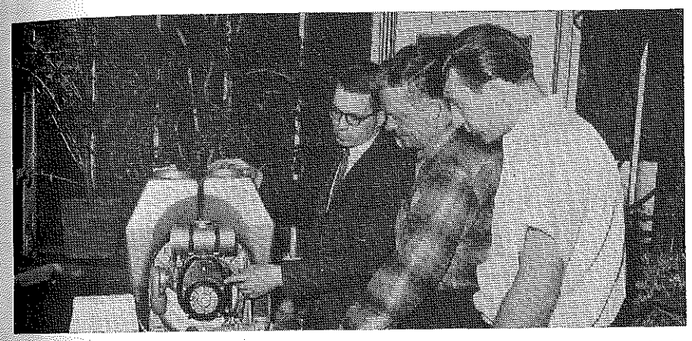
Session *Subject Matter*

1. Introduction. Registration. Tour of greenhouse facilities. Available references and other literature.
2. Principles of design. Basic plan drawing.—Scaling of dimensions. Drawing scale plans. Composition and scale, balance, color, etc.
3. Principles of design. Types of plant materials. Design of the public area.
4. Principles of design. Landscape sketching. Design of the living and service area.
5. Principles of design. Ornamental shrubs and vines. Design of Non-residential properties.

   Identification Growth habit and requirements aesthetic qualities
6. Ornamental shrubs and vines. Trees.
7. Herbaceous plants. Specialty plants.
8. Plan drawing. Discussion of plan designs. Walk and patio design. Work on specific, actual drawing problems in class.
9. Plan drawing. Discussion of plan designs. Work on specific drawing problems in class.
10. Summary and review.

NOTE: Beginning with session 2, each student is requested to complete a drawing assignment prior to each class. Drawings are projected by opaque projector for class discussion.

In vocational horticulture adult classes, Woody Plant identification is learned several ways. Students are learning here from mounted leaf specimens. (L to R) Peter Wotowiec, Instructor; "Bud" McCroby, David Gehrke, Mrs. R. T. Davies, R. T. Davies, Greg Burnason, Frank Wierzbicki, Dick Dreger, Jim Schulz, and Dan Morrison.



Cleveland adult vocational horticulture class members learning basic operations of the Mist Blower. Peter Wotowiec, Instructor; Frank Wierzbicki, owner of Bill's Nursery, Independence, Ohio; and Paul Good, employed at Bill's Nursery.

Wotowiec and Woodin

(Continued from page 282)

As a result of this approach, instruction in each of the classes now offered has become more specific and useful. Generally speaking, courses have become more specialized with increased depth of study and understanding.

Rapid Expansion

Horticulture is a rapidly expanding facet of agriculture. It is closely correlated with the expanding population of the United States which between 1950 and 1960 increased 18.5%. Since this increase in the horticulture business can be expected to continue, the demand for competent horticultural employees will rise. As technology progresses, present and future horticultural employees can be expected to improve types of formalized instruction to maintain and upgrade themselves in their vocations. Continuing study of employee needs should help to make such adult instruction in horticulture of maximum value.

TABLE 1

COMPARISON OF IMPORTANCE OF AREAS OF HORTICULTURAL KNOWLEDGE NEEDED BY EMPLOYEES OR SELECTED CUYAHOGA COUNTY HORTICULTURAL BUSINESSES[1]

Area of Horticultural Knowledge	Garden Equipment and Supply	Nursery	Landscaping	Vegetable Greenhouse	Floral Greenhouse	Golf Course	Other	Total	Rank
Horticultural Equipment and Maintenance	1.78	2.03	2.32	2.02	2.02	2.10	2.10	2.40	1
Insect Controls, Diseases	2.37	2.02	2.30	1.70	2.02	1.78	1.92	2.35	2
Landscape Maintenance	1.70	1.93	2.25	1.23	1.80	1.93	1.93	2.13	3
Herbaceous Plant Materials	2.20	1.95	2.08	1.13	1.88	1.56	1.88	2.11	4
Soil Science and Fertilizers	2.12	2.02	1.26	1.98	1.75	1.70	1.86	2.11	4
Basic Botany and Physiology	1.52	1.82	1.85	1.65	2.00	1.88	1.75	2.08	5
Landscape Design and Construction	2.12	1.80	1.93	1.10	1.67	1.70	1.77	2.02	6
Greenhouse Management	1.20	2.43	1.63	2.08	2.13	1.03	1.43	1.99	7
Plant Propagation	1.40	1.57	1.67	1.72	2.02	1.53	1.85	1.96	8
Woody Plant Materials	2.25	2.02	1.83	1.05	1.67	1.56	1.27	1.94	9
Turf	1.85	1.80	1.57	1.08	1.57	1.98	1.65	1.92	10

[1] Importance was calculated from a scale on which 1.00 Represented knowledge of *no* value to job performance 2.00 Represented knowledge *desirable* for job performance 3.00 Represented knowledge *essential* to job performance.

A Look At Safety Through Safety Glasses

THOMAS A. HOERNER, Teacher Education
Pennsylvania State University
and
DONALD L. AHRENS, Agricultural Engineering,
Iowa State University

Editor's Note: The authors combined experiences of four years teaching vocational agriculture and seven years teaching Agricultural Engineering in writing this article.

How does your safety program in vocational agriculture rate? Are you yourself wearing and requiring each of your students to wear eye protection while working in the agricultural mechanics laboratory? Some vocational agriculture instructors have been criticized for not keeping up-to-date in reference to safety rules and practices required of vocational agriculture students. Putting on safety glasses should be a "safety first" every day as the student enters the agricultural mechanics laboratory.

In short, the problem of accidents including the possible loss of eyesight is one that constantly confronts each vocational agriculture instructor. The teacher is the central figure in educating students to practice safe working habits. He also is the one who must bear the blunt of criticism should an accident occur. Students watch and imitate the action of you, the teacher. Therefore, it is up to you to set a good example for your students by not only requiring the wearing of safety glasses but also wearing them yourself while working in the agricultural mechanics laboratory,

State Laws

Recently a number of states have passed laws related to the wearing of protective eye devices by students and teachers. For example, the State of Iowa's last General Assembly enacted a law stating that every student and teacher in any public school with vocational agriculture be required to wear eye protection devices when "participating in any phase of activity which may subject the student or teacher to the risk or hazard of eye injury from materials or processes used in same course." Working with any of the following would warrant the wearing of these devices: hot molten metal, milling, sawing, turning, shaping, cutting, grinding or stamping of any solid material, heat treatment, tempering, or kiln firing of any metal or other materials, gas or electric arc welding, using caustic or explosive of any vehicle while in the shop.

Even though we and our students have worked in the above conditions since the beginning of the vocational agriculture program, it is interesting that we did not become concerned about eye safety until a law pertaining to such was passed. Now that we must require eye protection devices to be worn, many questions come to mind such as: type to wear, method of storing, sharing of glasses by students, and who should purchase the safety glasses? The following are some recommendations that should help to answer some of the questions that you have been or will be faced with in the near future.

Types Available

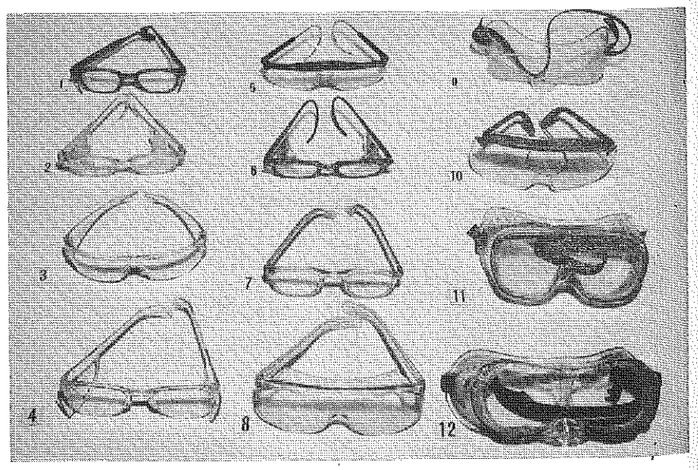
As illustrated below, there is a wide variety of types, styles and sizes of eye protection devices available for use in this safety program. Two general types are pictured, namely, the goggle type, number 9, 11 and 12, which may be worn over regular prescription glasses, and the spectacle type similar to numbers 1, 2, 6 and 7. The spectacle type protection generally have a tempered glass lens rather than the plastic lens as often found in the goggle type safety glasses.

Safety glasses such as numbers 3, 4, 5, 8 and 10 have plastic lenses and give the wearer a minimum amount of protection. These types would not be recommended for conditions where heavy grinding is being done, arc welding, or in working with hot molten metal. They are the least expensive of the types pictured.

Type Recommended

The spectacle type, through the most expensive, would be recommended over the goggle type glasses for use in vocational agriculture. They are generally the most comfortable for the wearer, are small and easy to store, can be used under an arc welding helmet, and give the wearer a high degree of protection. The recommended protection for the student who wears prescription glasses that do not have the tempered lens would be the larger bulky type goggles. All glasses shown in figure 1 meet the requirements as established in the previously mentioned law.

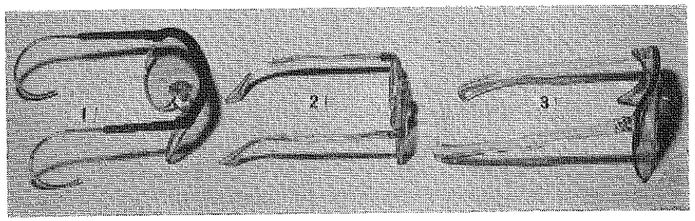
(Continued on next page)



Types of eye protection devices

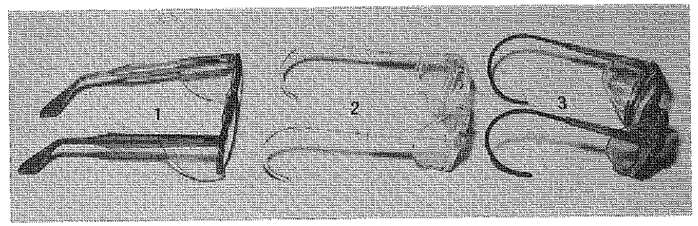
(Continued from page 284)

The various temple or bow styles that one might select when ordering the safety glasses are pictured to the right. Pair number 1 illustrates an adjustable cable type, number 2 the panel or spatula bow, and number 3 a straight bow. All of these temple styles can be ordered in various lengths. Of the different temple styles, the cable type would probably be best suited for the agricultural mechanics laboratory. This bow wraps around the individual's ear and tends to keep the glasses in place in most working positions. Also, they can be adjusted to fit the wearer by bending the cable of the bow.



Temple or bow styles

Another factor to consider when ordering safety glasses is the type of side shield. A "semi" shield is pictured on the first pair of safety glasses at the right. This shield would protect one from objects entering from the side; however, it does not wrap around the face completely such as the side shield shown on pair number 2. This type along with the type illustrated on number is called a "full" side shield. These would give the wearer the most protection since they tend to hug the face area completely. The "full" side shield can be plastic as shown in pair 2 or the wire mesh as illustrated in pair 3. When ordering be sure to consider all specifications as recommended by the various manufacturers.

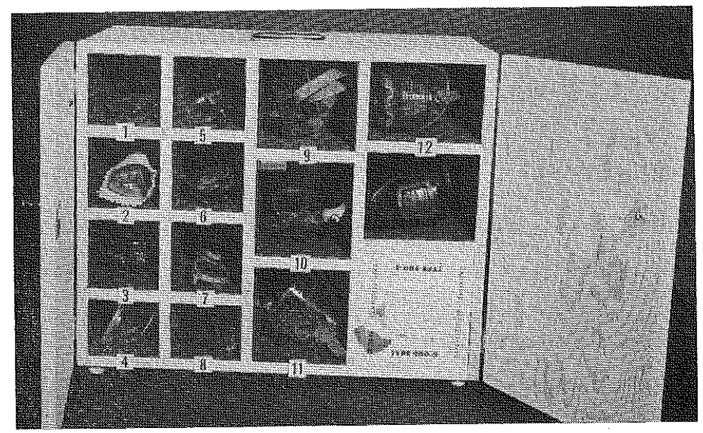


Types of side shields

Storage of Glasses

A very important phase of this program is the storage of the eye protection devices. The storage unit pictured in figure 4 is an example of a way to store the glasses. Each compartment allows adequate space for one pair of glasses. For the spectacle type the compartment is 3" x 3" while for the larger goggle type 4" x 4" is recommended. The compartments are 8 inches in length. All of them are felt lined for maximum protection of the glasses during placing or removing from the storage unit. Each compartment should be numbered or have a name space provided for each student.

Doors are a must on the storage unit. Dust accumulation, particularly on plastic lens may cause some scratching of the lens during cleaning. A box of cleaning tissues should be provided in the storage unit as shown in figure 4. Also, the glasses should be thoroughly cleaned once during the school year and once during the summer months by dipping or allowing to soak in a disinfectant solution as recommended by your local eye doctor or safety glass manufacturer.



Storage unit for safety glasses

Sharing Glasses

Another question that you will be faced with pertains to the sharing of the glasses by students. It is recommended that each student be assigned at the beginning of the school year, his own individual pair of safety glasses. This brings to mind still another question as to who should purchase the eye protection devices. To provide maximum protection for the student, the teacher, and the school the best method is probably for the school to purchase and charge the student a nominal rental fee for annual use. Of course, it would be possible for the student to purchase his own safety glasses. As many differences of opinion exist on this topic, you should work with your local administration to solve this problem.

The main topic at this time, however, is that you protect the eyes of your students through the development of a complete safety program with the number one phase of the program being the wearing of some type of eye protection by each student in each agricultural mechanics class.

Searching for Direction—

Administration and Supervision

THEODORE BUILA and JOE P. BAIL,
Teacher Education, Cornell University

The Bureaus of Agricultural Education in State Departments of Education have been in the administration and supervision business for close to fifty years. The impact which has come to agriculture and education as a result of expanded technology has worked organic changes in these bodies. Now after fifty years we can ask *"have the staffs and the various policies kept abreast with the rapid pace set by science and technology?"* If we need reason to question, then let it be legal. Each Bureau is charged with the duty of continual improvement. [1]

Some Resist Change

Students of American agricultural education are well aware of the problems manifested by the adjustment to change, and these changes are not being experienced for the first time in our profession. Yet it seems almost vividly clear in the face of little or no empirical evidence that *some State staffs have resisted change when massive improvements* in the educational base and teaching skills and knowledge have been made which signal change.

The conclusion arrived at by some staffs is that holding the "line" in the rapid succession of legislative Acts is the only politically safe position that can be tendered.

Yet, the policy implications of these very Bureaus are long-time in nature, and their ramifications, if unsound, *can cost the student* and *profession alike dearly* when both need all the support they can garner.

[1]United States Department of Health, Education and Welfare. *"Administration of Vocational Education."* Washington: U. S. Government Printing Office, 1958, Sections 102.54 (a) through (c) and 102.1 (h), pp. 1 and 13.

Operational Aspects of Current Administration and Public Supervision in Agricultural Education

The authors accept as prima facie evidence the limited documentation and personal discussions that "report writing" activities *do indeed* occupy a considerable amount of time in many state offices. Even though it can be rationalized why a head state supervisor might have an anxious concern over these reports, the extensive amounts of time spent cannot completely justify the abandoning of the concept of a "total program."

It is common knowledge that supervisors are spread quite thin in some states. This bold condition, *a gross lack in staff members and numbers*, seems too self-evident to have been overlooked. Certainly without adequate staff little can be expected from a Bureau.

It is unfortunate indeed that the present generation of agricultural teachers has grown up in an environment where State staffs have been undermanned and service provided has been limited, and as a consequence little is expected from them. This development has been met with only minimum criticism from college teacher training staffs.

In many states the duties of the supervisor are manifold. Looking at the actual visits to the high school, a supervisor can be seen performing the role of an evaluator, and the very next time he visits the same school (or at the same time) he is soliciting candidates for a "special award."

Lastly, new legislation in: 1)Vocational Education, 2) Poverty Acts, 3) Manpower Development, and Training, 4) Higher Education Acts, and 5) Labor Legislation, *all* affect the complexions of federally sponsored vocational programs in agricultural education.

The eventual outcome is a matter of simple arithmetic. A man can be divided only so many ways!

This should give us just cause for concern. A man *loaded* with the present number of responsibilities, such as the supervisor, is called for a special type of training. *Unfortunately,* the training does not generally exist in a formal college program, that is, a program that purveys the expertise required of a man occupying such an important position.

Suggestions for the Improvement of Administration and Supervision in Agriculture

There is nothing constricting in or about federal legislation as it concerns vocational education in agriculture. In fact legislation spells out quite clearly the responsibility delegated to the states in the development and improvement of their respective programs. Although space is devoted to the reporting of activities by the states it certainly cannot be interpreted that reporting is to be the sole or primary activity of State Bureaus. In adapting to existing administrative and supervisory duties the following suggestions are made:

1. A reassessment of policy should be made on the State level with the focus of attention being to the servicing of agricultural education on a *total* basis. Program improvement should be the primary activity, with reporting made a secondary goal.

2. A re-deployment of staff should be made with the expressed objective of eliminating the conflict of roles of supervisors. Furthermore, workloads should more closely correspond to what can successfully be accomplished in a quality not quantity manner. A new extended staff (incorporating existing staff) should be created to deal with the different responsibilities enumerated in the State plan. For example, one staff member might be placed in charge of reports eliminating the situation where a regional supervisor must do the "leg work" on running down delinquent reports. A further example, instructional or curriculum material specialists should

(Continued on next page)

Buila and Bail
(Continued from page 286)

be appointed to work with teachers on a consultant basis *without* other duties. Still further, program evaluation should be handled by another group of staff members. In all cases present knowledge of roles should be utilized in the assignment of compatible duties to a consultant. This attitude, if adopted, recognizes a more realistic conceptualization of what one man can handle *and makes the training of such personnel feasible.*

3. A regional approach should be adopted in the mutual solution to professional problems and in the development of stronger teaching programs. This can be accomplished between adjacent states or between states which share similar problems. It is to be expected that these activities, wherein cooperation should be expected, would range from joint use of teacher training facilities (college, staff, and high school centers) to the development of teacher training materials such as is the case in the Southern Region (originally the SAAE-VA, now AAAE-VA) with cooperation in the development of Agricultural Mechanics instructional materials.

4. It should be fully recognized by the participating states that a *moral* and *legal* responsibility is *owed* to its citizens. This responsibility is to provide continuous improvement of instruction. Nothing less can be tolerated.

Summary Statement

As we indicated at the outset, generalizations are difficult in ascribing a given set of circumstances to a certain state. Yet, it is clear to these authors that a reassessment of present policy decisions by professional staffs is in order. The vast amount of activities and tasks one supervisor must cope with is truly herculean. Here, a division of labor is called for.

In the future, a neat, concise, and complete State report will not, cannot, serve as the sole document for judging the merit of a State program in agricultural education. It is towards the improvement of this present "treadmill-state" that we seem to be caught in that this article is devoted.

Themes for the Agricultural Education Magazine

September—
PLANNING SUPERVISED PRACTICE FOR *ALL* STUDENTS

Emphasis on *all* students. Reports of programs designed for students with varying backgrounds in same class. Same for special classes for boys having no facilities for supervised practice. Relating supervised practice to teaching program. Summer programs of supervised practice. Relationship to work experience programs.

October—
IS ADULT EDUCATION GETTING LOST IN THE SHUFFLE?

Are we still in the business of adult and young farmer education? Is time alloted for this purpose? Full-time teachers of adults get results—reports of success stories. Adult education in agriculture for other groups as well as farmers—agri-business, industry, urban groups.

November—
OUR CHANGING ROLE

Are we in Vocational Agriculture, Agricultural Education, Vocational Education, or Occupational Education? Educational leaders or agricultural specialists? Examine the changing role of the teacher, the supervisor, and the teacher educator.

Send your articles to a Special Editor or direct to the Editor, three months in advance.

BOOK REVIEWS

KOHNKE, HELMUT, *Soil Science Simplified,* Balt Publishers, West Lafayette, Indiana, 1966. pp. 78, Price $1.50.

"Soil Science Simplified", in the words of the author, is a book that "deals with the distillate of soil science, written for those who want to get acquainted with the basic concepts of soil, but have not the time nor the inclination for an extensive study."

This publication is prepared for beginning students in the field and for laymen interested in information about soils. This is a third edition of this publication. The first two editions found wide acceptance in colleges, high schools, by farmers, agronomists, fertilizer dealers and others interested in the subject matter covered.

The fundamentals of soil science have changed little, according to the author, from those outlined and covered in the first two editions of this book. However, some new insights have developed and these are presented in this book. A glossary of important soil terms has been added to the current edition.

The author is a soil scientist at Purdue University.

Guy E. Timmons
Michigan State University

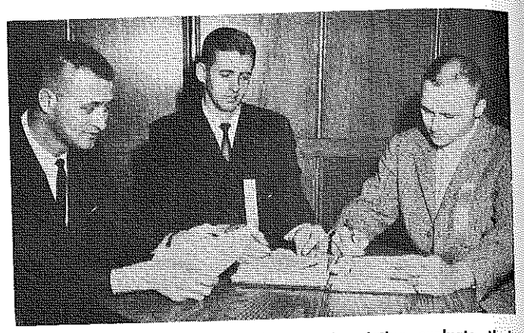
LUCAS, GEORGE B., *Diseases of Tobacco (Second Edition-1965)* North Carolina State University, Raleigh, The Scarecrow Press, Inc., New York. 778 pages. Price $18.00.

Much has happened in tobacco diseases in the seven years since Dr. George Lucas first published his comprehensive book, *Diseases of Tobacco,* and now a completely revised and enlarged edition has come off the press. Written by an outstanding plant pathologist, the book provides an excellent resource for agricultural education workers seeking a single, authoritative, and comprehensive, and up-to-date source of information on tobacco diseases. Moreover the book is well organized and indexed, easy to read and understand. It is divided into parts on the basis of eight groups of tobacco diseases, i.e. fungus diseases, bacterial diseases and virus diseases. A chapter is devoted to each disease. Drawings, diagrams, and pictures are numerous and of excellent quality. Despite the depth on each disease, the writing is direct, clear, concise, and amazingly easy to digest. It should be a most valuable resource for teachers and farmers in the tobacco belts and as a college text and source of research references.

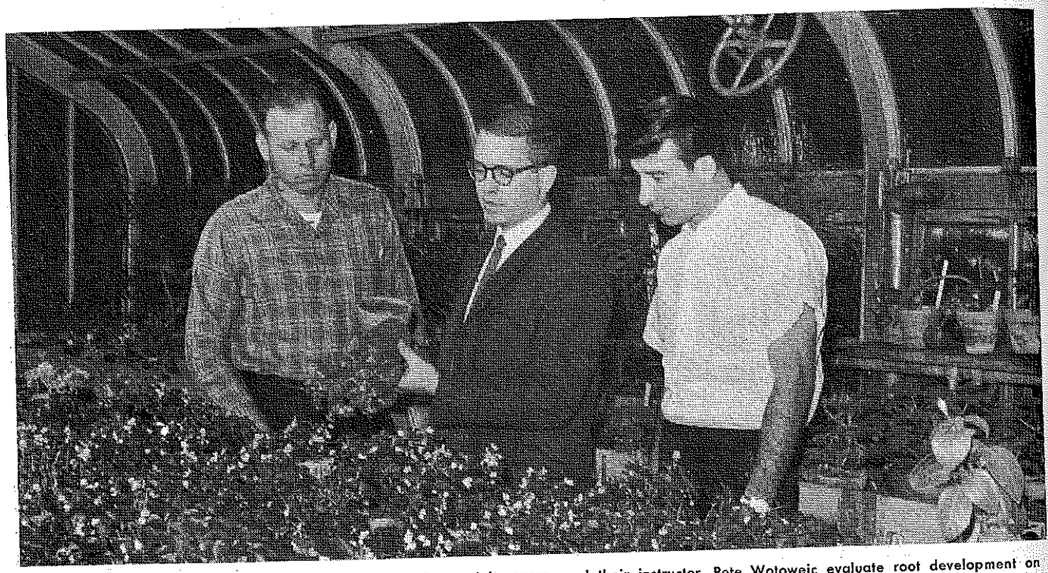
T. R. Miller
North Carolina State University

Stories in Pictures

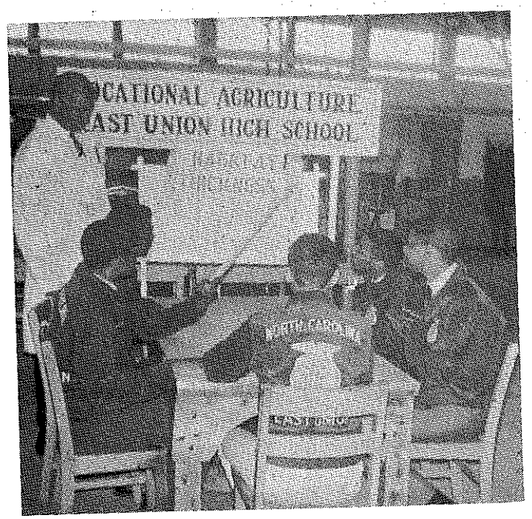
Gilbert S. Guiler
Ohio State University



Officers of Montana Voc. Agr. Teachers Association evaluate their State program. Photo—Ashcraft



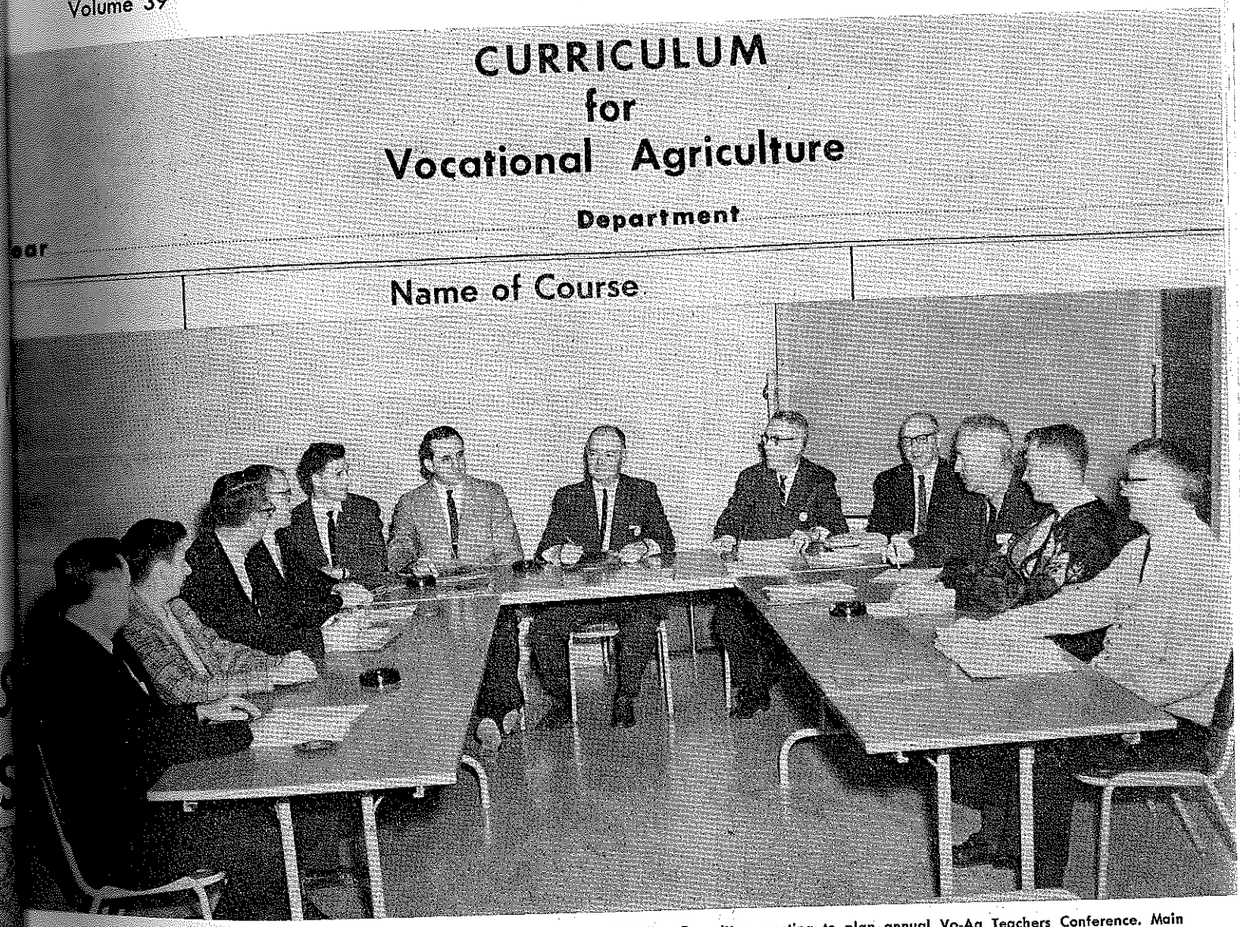
Richard Dreger, Pane Good, members of a Cleveland, Ohio adult course, and their instructor, Pete Wotoweic evaluate root development on potted Begonia plants.



There is evidence of evaluation being done in selecting Ohio Young Farmer's wife year. Four area winners have accepted their awards at the annual Young Farmer Photo—

Volume 39 July, 1966 Number 1

Agricultural . . . . . Education



West Virginia Vocational Agriculture Teachers Association Program and Policy Committee meeting to plan annual Vo-Ag Teachers Conference. Main emphasis to be "Implementing Training for Off-Farm Agricultural Occupations as an Important Phase of the Curriculum.

Featuring

CURRICULUM CHANGES