

Herbert Bruce, Jr.  
Teacher Trainer Ag. Ed.  
College of Education  
University of Kentucky  
Lexington Kentucky 40506

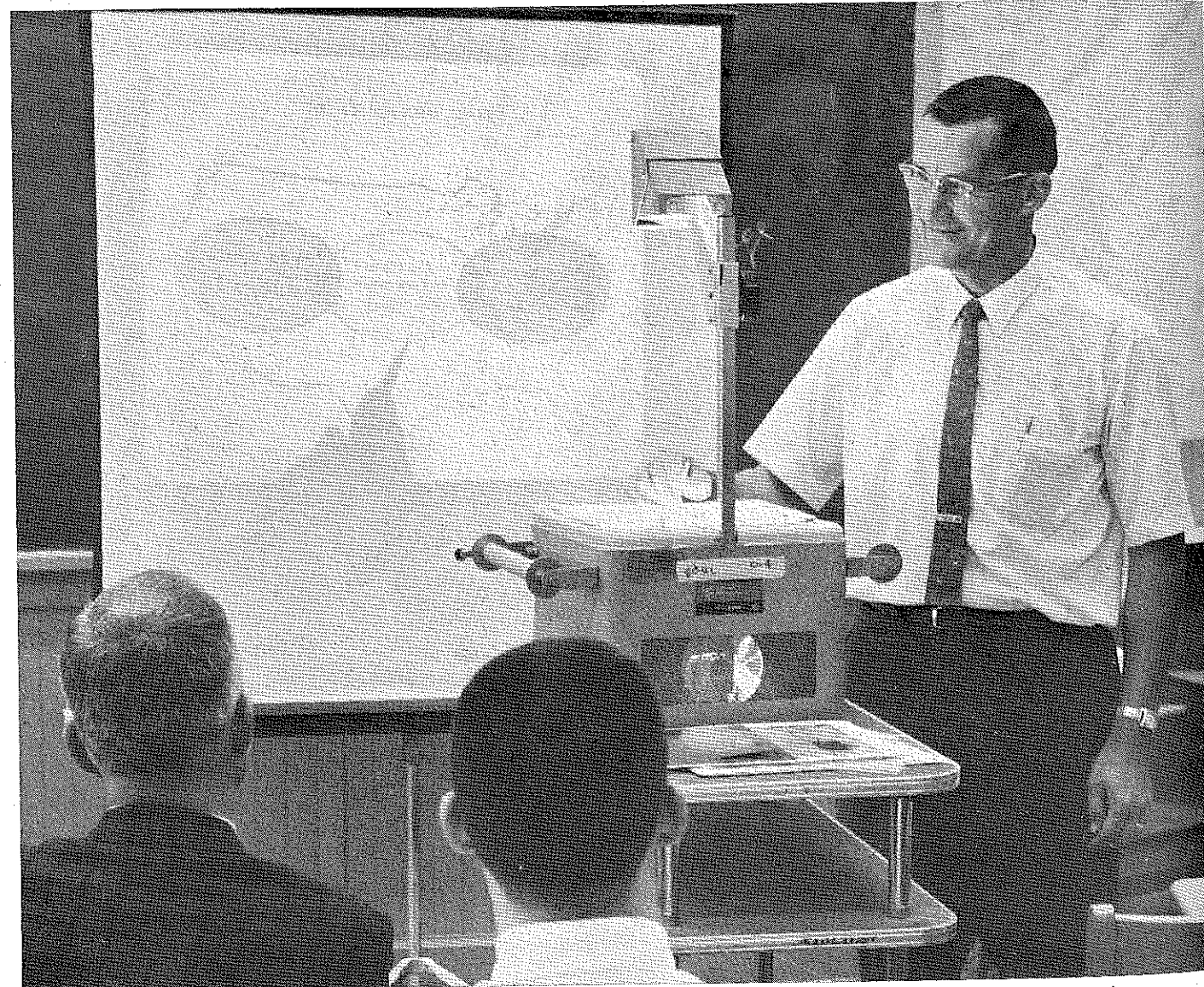
# Stories in Pictures

GILBERT S. GUITER  
Ohio State University

(More pictures pages 166-67)



Nebraska Vo-Ag Teachers watching a demonstration of the Eutoloy Process during an In-Service Training Program.



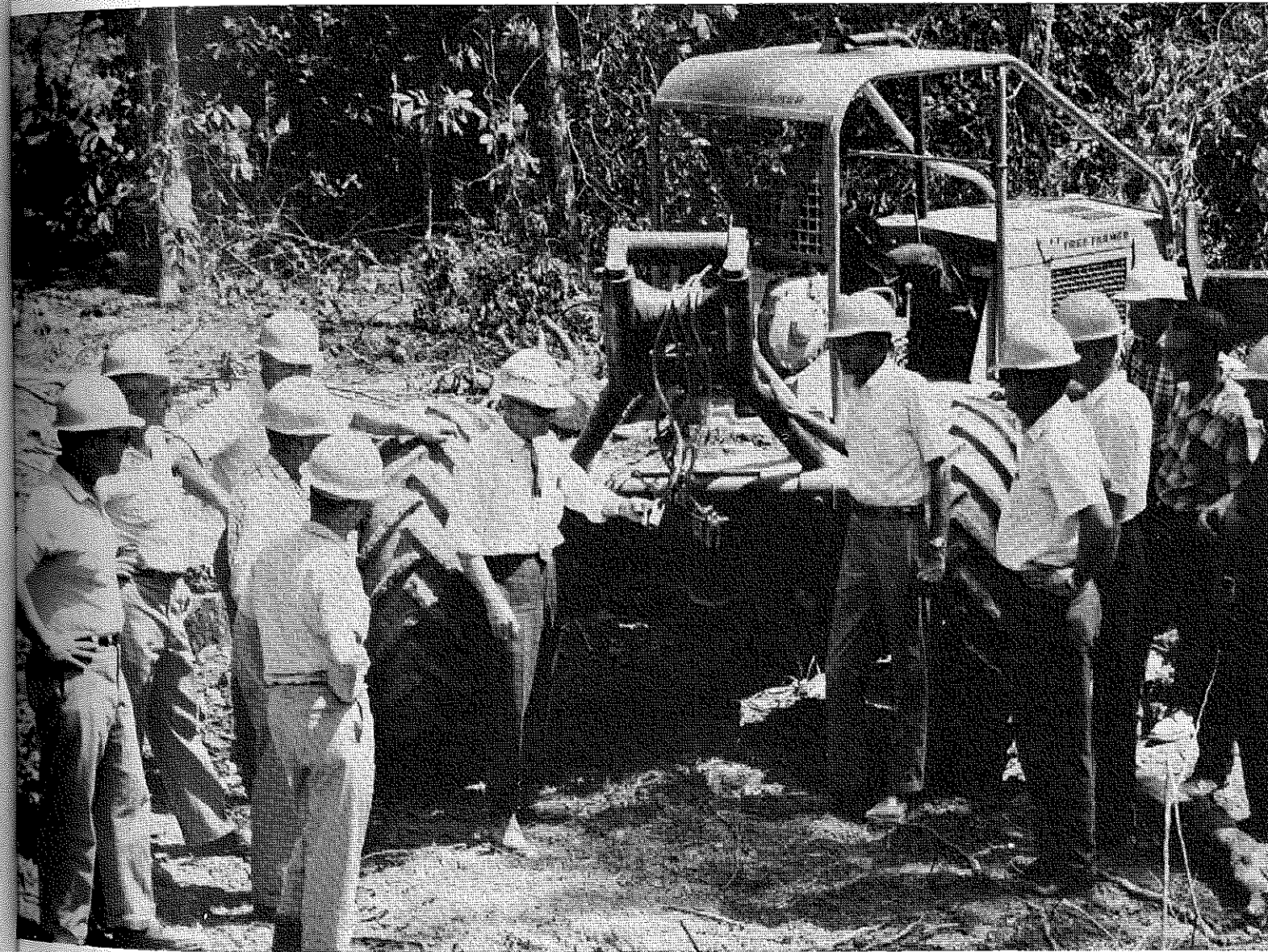
Dr. James Clouse, Agricultural Education, Purdue University, presenting some materials and information concerning graduate work with some teachers of vocational agriculture. The teachers are: Carl Vinyard, South Newton, and Lary Graves, Washington.

# Agricultural . . . . . . Education

Volume 39

February, 1967

Number 8



Teachers of vocational agriculture from Georgia and Alabama participated in an in-service training program to prepare them in pulpwood production. The Georgia teachers are now conducting pilot programs in their respective schools. An evaluation of this program will be made the end of the year for the development of similar and permanent type programs for the future. Photo by Bryant.

Featuring **RESPONDING TO CHANGING NEEDS**

1917.....50th ANNIVERSARY.....1967  
1st National Vocational Act



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. Wieggers, 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

**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

EDUCATIONAL PRESS ASSOCIATION OF AMERICA

Volume 39 February, 1967 Number 8

**TABLE OF CONTENTS**

	Page
Editorials .....	171-172
Theory and Practice.....	171-172
A Look at Youth Training in Agriculture.....	173-174
Don Moeller	
Letters to the Editor.....	173
Co-op Ornamental Horticulture Project.....	175
Paul E. Hemp	
Vocational Agriculture—To Have or Not to Have.....	176
Walter J. Scheer	
Lettering Overhead Transparencies.....	177
Reed Franz	
More Workers Needed in Agricultural Occupations..	178-179
Harold R. Matteson and Walter T. Bjoraker	
Book Reviews .....	174, 179
Raymond M. Clark	
Procedures Employed by Teachers in Conducting Off-Farm Cooperative Work Experience Programs .....	180-181
Urban T. Oen and Ralph E. Bender	
Planning Supervised Practices for All.....	181
E. G. Henderson	
A Bit of Truth or the Whole Truth?.....	182-184
Howard Sidney	
Adult Education Depends Upon the Teacher.....	185
P. H. Alsabrook	
A Course Combining Production and Industry Agriculture .....	186-187
Five, Four, Three, Two.....	187
Cayce Scarborough	
Farm Management Program for Young Farmers.....	188-189
Gilbert L. Mathis	
Making Sense of the Census.....	190-191
Ralph J. Woodin	
Stories in Pictures.....	187, 192
Gilbert S. Guiler	

**Editorials**

**The Teacher in a Changing Program**



**Theory & Practice**

Cayce Scarborough

What sort of person will we need as a teacher in this changing program of vocational agriculture? We will need a change-oriented person. One that does not get his security from the past but from the changing present looking toward the future. Not afraid of change, but welcoming the change as a very valuable partner in an educational program. In fact, change is at the heart of the notion of education.

It is not a question of whether there will be change all around us. The question is more nearly whether I will have a part in shaping the change or be dragged along with it. Now, to do this it becomes necessary to see ourselves as change agents instead of guardians of the past. Then the question becomes, how can I become a better change agent? This is a big question, the answer demanding more space than we have here. Let's suggest that it will include a change in our way of looking at people and programs of vocational agriculture. Shift from seeing vocational agriculture as THE PROGRAM to be put into operation in a community, to taking a closer look, through careful research and study at the people in the community, then ask yourself how you as teacher of vocational agriculture can be an educational leader in developing a program to meet the occupational education needs of these people through a program of agricultural education. The major problem is to get a direct working relationship between the two key factors in any education program: PEOPLE AND PROGRAM. The program goals must fit the people's needs to be worthy of being called an educational program.

Admittedly this is a big order for a teacher of vocational agriculture, but I do not believe that it is impossible and I believe that it is necessary for you to further develop your ability as an educational leader in the directions indicated. I believe that each of us must face the fact that we are in the business of self-education now and as long as we work. I would summarize the priorities of your work as a teacher of vocational agriculture in the future, as follows:

- An educator more than an agriculturalist
- An educational leader more than a pig castrator
- A professional educator more than an agricultural worker
- More concerned with educational principles than with agricultural practices
- More concerned with the latest research in education than with latest agricultural recommendations
- More a specialist in teaching than a specialist in agriculture
- More a problem-solver than an answer-man
- Yes, even more a man of theory than of practice

With this new teacher of vocational agriculture, a new program will likely develop. To indicate direction, I have listed some things or areas that would be (1) discarded or radically revised, (2) held onto, and (3) added or increased in the years ahead.

*Discard or Revise Drastically*

1. Institutionalization of vocational agriculture or areas within the program
2. The notion that everyone must agree on everything
3. Emphasis on the local community *only*
4. Emphasis on farming *only*, especially in high school classes
5. Emphasis upon practice without relating it to desired learning
6. The idea that vocational agriculture is not for anyone who plans to go to college
7. The idea that vocational agriculture is *only* specific preparation for a specific job
8. The idea that you are through going to school yourself

*Hang Onto*

1. Year-round program
2. Home visits
3. Learning-to-do-by-doing
  - a. Supervised practice
  - b. Work experience
  - c. Laboratory
4. Individualized instruction
5. Citizen of the community

(Continued, next page)

Don Moeller, our Swift Friend, helps us with our theme of "Responding to Change," even though he was not asked to write on this subject. Read this article and see if you think that he has a message for all of us in Agr. Ed. responding to change.

Another entirely different illustration of responding to change is reported in *Agricultural Situation*, October, 1966. As a result of a nationwide study of farm debt they found that not only do most farmers owe money, but the larger and apparently better farmers are heaviest in debt. "I don't owe a red cent to anybody" is a boast that carries little weight in modern farming. Once again an old reverently held idea gives way to a new approach.

More terminology trouble. Everybody seems to be having it. Now it is the church. One editorial suggested these changes: *If the term Sunday School Teacher has lost some of its sheen, why not substitute Bible Instructor? Instead of Sunday School why not something like Bible and Life School?* These changes would make better educational programs in the churches???

Edwin Love, Arkansas, continues his support of the *Ag Ed Magazine* as a resource for professional improvement. He urges readers of the state *Service Bulletin* to watch for issues discussed, making a file for reference. He urged teachers to give special attention to the September issue featuring Supervised Practice.

(Continued on page 172)

## Theory and Practice

(Continued from page 171)

Still another response to change is in the "go-indoors" trend in livestock and poultry. Bunny Broyles, Sales Training Manager, Coulds Pumps, reports the following results of the trend toward indoor confinement: 10% of all hogs now raised in complete confinement, two-thirds of the hens and practically all of the broilers and confinement raising of beef cattle is catching fast.

"A willingness to disregard conventional wisdom is essential to change and innovation. However, a consistent disregard of tested principles is tantamount to pouring out the baby with the bath water."

John Lunstrom, Indiana University in Phi Delta Kappan, Nov. '66

How are you making use of the nicely done reprint of "A Future For You as a Vo Ag Teacher" from the *National Future Farmer*? The reprint is well illustrated and packs a big story in a small space.

Dave Craig, University of Tennessee, suggests an innovation for our Magazine. He would like to see a column entitled *INNOVATIONS*. He suggests that sources be named to secure and screen content, give emphasis to ideas applicable at local level, especially those growing out of 88-210 projects. How do you like the idea? Will it work? Who will be it?

If Hap Dalton wants to work after retiring as supervisor in New Mexico in some distant future, he can sell subscriptions to magazines. Here's what he wrote recently, "We now lack only four of having subscriptions for 100% of our teachers and expect to send these in the near future."

*Prejucator*: one who has a closed mind to new ideas!—Phi Delta Kappan

Thanks for your articles, letters, and comments. See you next month.

Cayce Scarborough

Dr. Benton K. Bristol is Associate Professor, Department of Agriculture, Illinois State University, Normal, Illinois. From 1963 to 1965 he was Consultant in Teacher Education—Agricultural Education, Ohio State University AID project in India. Prior to that Dr. Bristol was with the Department of Agricultural Education, Pennsylvania State University.

Dr. Roy Dillon is now Associate Professor of Agricultural, University of Nebraska effective January 1. He has the additional responsibility as Co-Director of RCU.

## Editorial

(Continued from page 171)

## Add or Increase Sharply

1. Emphasis upon occupational education (vs teaching subject matter)
2. Appropriateness of vocational education (as to age, situation)
3. Emphasis upon education and economics involved in agriculture
4. Understanding of population status and trends
5. Creativity through experimentation (vs waiting for someone to tell you what to do now)
6. Seeing vocational agriculture as a changing program
7. Seeing adult education as an integral part of the work day of every teacher
8. Seeing self as a change agent and those enrolled as clientele in the change process
9. Theory, philosophy and principles underlying practices
10. Self-education as a continuous process
11. Seeing the teachers of vocational agriculture as the key people in developing new programs to meet new needs of people

This is not meant to be a prescription to cure whatever may ail vocational agriculture. Neither is it meant to be a blueprint for the future. Either a prescription or a blueprint would violate the principle underlying these ideas. That is, we are all in this together, and must jointly assume responsibility for the future of vocational agriculture, which means our own professional futures. No one can really carry someone else, because he too has a full load. Let's encourage each other, welcoming differing ideas about what should be done. We have overdone, I believe, the idea that we must all agree and cooperate on every little thing. The fact is that many times conflict results in much more desirable change than does cooperation. As someone has said, in discussing leadership, "We don't need experienced men as much as we need some who can do things that have never been done before."

Cayce Scarborough

## State Leaders and Change

We hear much about change. Speeches, articles, and discussion are devoted to change. Sociologists and others do considerable research on change, including the process and rate of change. Some of this research is devoted to learning more about how people react to change. How well can they take a change affecting them and their work? How do they react? How much stress is set up? In short can they "take it"?

There have been some special efforts made in studying these basic principles of change and how their influence may be applied to educational programs. An outstanding example of such an effort is in the College of Education at Ohio State University where they have been concentrating on *Strategies for Educational Change*.

It does not appear that leaders in vocational education have done their homework in this area. Some do not seem to be aware of the factors involved in the change process. At least some do not seem to use clearly established guides in trying to get major changes made by people in educational programs. This is particularly noticeable in the case of trying to change teachers of vocational agriculture. Frequently the state staff will decide that some major changes need to be made in curriculum or some other area *by all teachers in the state*. Then, at the state conference, the teachers are told what changes they are expected to make in their work, and strongly urged to make these changes immediately. Usually, there is some follow-up to still further encourage the proposed change.

Such a procedure is not likely to result in the expected change. Failure to recognize some of the basic principles of change, the change process and all that is involved in making a major change cannot attain the desired results.

The conclusion to this line of reasoning is obvious. That state leaders should become change-oriented in *their own jobs*, study the sociology of change, and strategies for achieving change in an educational program. It is believed that some of us do, and some of us don't.

Cayce Scarborough

## A LOOK AT YOUTH TRAINING IN AGRICULTURE

DON MOELLER, Public Relations Department  
Swift & Company



Don Moeller

Luther Burbank once said, "It is well for people who think, to change their minds occasionally in order to keep them clean."

Those in education and industry who have failed to heed this suggestion may today be looking at youth education and training through clouded eyes. The vast change that has occurred and is still taking place in our economic and social order fairly cries out for comparable change in education. Yet, in what is known the world over as a classically advanced agriculture, we are lagging in many areas in its most important ingredient—schooling. Not just "schooling" in terms of reading, writing, arithmetic and producing farm products, but "schooling" in the very specific areas that are necessary for success in both modern agriculture and—this is most important—in the modern business world.

## Train for Industry Too

It is easy to overlook the magnitude of the changes that have taken place in industry if we concentrate only on the "revolution" that has occurred in agriculture! In both segments of the economy, the changes have been great and far reaching. Paramount, here, is the degree of required skill which has risen in each segment, not the great reduction in manual labor. Thus, the challenge to education is not only to equip the relatively few farm-bound youths with modern educational tools, but to recognize the needs for that greater number who are industry bound. And, the two sets of tools are not as dissimilar as is sometimes stated.

Dr. T. W. Schultz of the University of Chicago recently pointed out that, in general, farm people and their leadership are not conversant with the ideas, philosophy and historical growth with

which agriculture today is so interwoven.<sup>1</sup> He concedes that they understand the technical basis of modern agriculture, but indicates that comprehension is low when it comes to shaking off the decades of suspicion of anything new in "big business," the "social standards" and international economics.

For example, "Where," Schultz asks, "... are the county agents who can hold forth competently on these cultural, economic and historical issues? And, where is the instruction to prepare them (county agents) for this task?"<sup>2</sup>

<sup>1</sup>"Economic Crisis in World Agriculture," T. W. Schultz, 1965, University of Michigan Press, Chapter 4, p. 93.

<sup>2</sup>*Ibid.*, p. 93.

(Continued on page 174)

## LETTERS TO EDITOR

Dear Sir:

I enjoy the Ag-Ed magazine very much. It has many worthwhile articles in it.

I would appreciate your help concerning some of my friends who pay their subscription rates but do not get the issues.

The specific ones are:

Lee McDowell  
Jena High School  
Jena, La.

Curtis Richardson  
LaSalle High School  
Olla, La.

Let me know what to do. You might send the information to them also.

Sincerely,  
James M. Welch, Vo-Ag  
Oak Grove

Thanks very much. The kind words are appreciated. Sorry about the subscription service. I don't handle that but will check with our publishers.—C.C.S.

Dear Mr. Cayce:

As a student teacher, I lack practical experience with only summer experience in a school that has a program with placement on the job; however, this does not prevent me from having an opinion, nor does it mean that I have not been exposed to concepts (new and/or old) with definitions.

I believe "Occupational Experience" is a very good term. Let us face it men—the word "Practice" was fine thirty years ago, but Agriculture is on the move and this has been brought out in the Vocational Education Act of 1963 in which the term "on a farm" requirement was dropped. Let us not forget that its purpose is to assist, maintain, extend, and improve existing programs of Vocational Education. This statement alone takes in more than just Agriculture. The Vocational Agriculture Program must be thought of as a "Total Program in Vocational Agriculture."

In Illinois, the state plan suggests that freshman and sophomore students of Vocational Agriculture include Production Agriculture with a supervised farming program before they are allowed to enroll in an Agricultural Occupations course. It is felt that students with a farm background will have much more success in the Agricultural Occupations if they can understand the farmer and his problems.

Yes, I believe "Occupational Experience" is a very good term; however, it is not specific enough. I feel that "Agricultural Occupational Experience" is a much stronger and more meaningful term. Gentlemen, let us be proud of our profession and use terms and programs that do not allow us to fall into a group generalization.

Sincerely yours,  
Rollin R. Nelson  
Student Teacher  
Illinois State University  
Normal, Illinois

Dear Cayce:

Enclosed is an article which I have prepared summarizing some of the thoughts from the *Training Institute for Teachers of Technical Programs in Agriculture* which was held on our campus this past summer.

I am also enclosing five pictures taken here on the campus.

I think the Institute held at Cobleskill was well received by those who participated. These men were the most outstanding group of people I have ever worked with. They showed a great deal of enthusiasm and interest in all the meetings. I felt that the week was a worthwhile endeavor and hope that there will be some final results by the way of the people who attended actually promoting agricultural education for technical careers in agriculture as needed in the various areas of the country.

Feel free to use any of these pictures if you publish the article and they add value to it.

Sincerely,

Howard Sidney, Chairman  
Agricultural Division  
A & T College  
Coblesville, N. Y.

Thanks Howard, the article illustrates one good way of helping teachers respond positively to change.—C.C.S.



Don Moeller

*(Continued from page 173)***How About Vo Ag?**

This same question can also be appropriately asked of our vocational training in agriculture at the high school level. For those young folks who will not go on to college, but move directly to agriculture or to agri-related business, at least a working knowledge of these matters is more essential today than ever before. For the college bound youth, the question is even more pertinent for the agricultural college which will likewise be funneling graduates into modern agriculture and agri-related businesses.

**Understanding Socio-Economic Situation**

One significant observation concerning a great many products of vocational agricultural and agricultural college graduates is their lack of exposure to the elements of economic and social organization. The boy with a farm background generally has for the most of his life been exposed and indeed trained in the techniques of modern agriculture. Vocational training further enhances this background and college presumably brings it to its zenith.

For the young man returning to the farm this educational accomplishment represents a basic ingredient to success—as again he presumably has the knowledge to combine in some sequence the other agricultural inputs of land, labor, capital and business enterprise. But, as Schultz points out, this is no longer the end of the story.

**Relate Socio-Economic to Ag**

The farmers and agricultural leaders of the future who cannot relate the economic and social changes of the rest of the nation and the world, to the progress or lack thereof in agriculture, will indeed be seeing the future through clouded eyes. Those who today find it difficult, if not impossible, to relate their business to such things as the European Economic Community, economics of beef imports into the U.S., the re-discount rate of the Federal Reserve Bank, farm price support programs, Public Law 480, etc., are doomed to repeat indefinitely the myths of agricultural fundamentalism.

For the young farm lad going to agri-related business from high school or college, his educational accomplishment is burdened even more. In addition to needing the educational tool of understanding, he has some other hurdles to overcome which are often unique to his environmental background.

**Hurdles and Handicaps**

In many instances, the young man from the farm is handicapped in the fields of social, cultural and economic experiences. This often acts as a barrier in his own mind at those all too rare moments when he sits down to figure out just what he can do in "big business." This writer has seen more than a few cases where this lack of social and cultural exposure has become the base of an inferiority complex. For example, an interview with a minister's son produced a personality that virtually apologized in every other sentence for wanting a job in "industry." This man had been conditioned by cultural, social and family experiences to the point of almost outright rejection of the material and social aspects of the business world.

In a real sense, much the same sort of conditioning takes place in many farm communities and families today. Boys often "pick up" a contempt for sales work in business and industry from their associations in their communities, their families, etc. Yet, approximately four or five out of six will be seeking employment in business and industry where sales work is the largest beginning opportunity for the "budding industrialist." Boys seem to get the inference that business men in large corporations just sit in plush offices and tick off multi-million dollar decisions on the basis of mysteriously acquired "inside information." There is a tendency on the part of a sizeable number of young men to believe that a few years as an apprentice manager will qualify them to manage a multi-million dollar business. Yet, the facts of business life are that with few notable exceptions, top management in business and industry is the product of hard dedicated work on the foundation of a realistic knowledge of business procedures and techniques.

There are some additional specifics that should be mentioned in passing: items like: being able to read a trial balance sheet, write and talk effectively, principles of business leadership and management, plus others. All this seems to me to be seated in a decided lack of knowledge of business fundamentals.

And so, from the vantage point of an agri-related business, I would paraphrase Schultz by asking: *Where are the teachers and the course work to impart these knowledge factors to farm youth?*

**Must Extend Educational Goals**

Finally, there is another challenge to youth training—not far removed from the foregoing discussion . . . it revolves around the motivation of farm youth to extend their educational goals.

Many farm parents do a poor job of "selling" their offspring on the growing necessity of a college education in today's competitive business world—farm or city. Dean D. C. Archer, Director of Resident Instruction, Kansas State University, is author of the statement that "only 1/3 of the rural youth who are capable of completing college work ever go to college." The reasons for this startling fact are no doubt fairly diverse. They probably range from financial to almost complete indifference on the part of parents and children.

Whatever the reasons, is not the existence of the situation in itself an opportunity for vocational education?

**Future Bright If—**

Educators may be assured that industry is presently reaching for qualified people and it is to be deplored if an untapped source is going into the unskilled ranks by default. And it seems to this writer that there is plenty of room for optimism in farm youth training—not only in what may be accomplished by a change in educational emphasis but in the numbers of youth to be trained.

**Book Review**

Morgan, R. F., *Environmental Biology*, Volume 4. New York: Pergamon Press, 1966. \$1.95. This is the fourth in a series of paperback volumes on environmental biology. This particular volume deals primarily with a study of centers of control in plants and animals, animal senses, and reproduction in plants and animals. The book is organized in terms of assignments, rather than in terms of chapters, but the presentation is primarily factual material, organized to present the fundamental biological principles involved. Appendices include a list of reference books and a dictionary of word roots and meanings. The series on environmental biology should be of value for reference in departments of vocational agriculture, particularly at the high school level.

Raymond M. Clark  
Michigan State University

**Co-op Ornamental Horticulture Project**

PAUL E. HEMP, Teacher Education, University of Illinois

Thirty teachers of agriculture from Illinois, Michigan, Indiana, Kentucky, Missouri, and Kansas participated in an Ornamental Horticulture Institute at the University of Illinois during the summer of 1966. They were preparing themselves to start or to expand vocational ornamental horticulture programs in their local high schools or junior colleges.

During a four-weeks session teachers were given instruction in plant propagation, turf management, arboriculture, greenhouse management, nursery management, and ornamental gardening and landscaping. Dr. John Gartner, Division of Floriculture and Ornamental Horticulture, University of Illinois, and members of his staff taught these areas.

Instruction in curriculum development, teaching procedures, supervised occupational experience programs, and teaching aids was provided by the Division of Agricultural Education, University of Illinois.

**Funded Project**

The institute is one phase of a research and training program being conducted at the University of Illinois with financial support from the United States Office of Education. Professor Paul Hemp, Division of Agricultural Education is director of the project. Funds have been made available under Section 4c of the Vocational Education Act of 1963 to finance a research and training project for an eighteen month period. The summer institute is only one part of the total project. Development of teacher source units, laboratory exercises and other curriculum materials and the field testing and evaluation of these materials are additional phases of the project.

**Local Application**

During the 1966-67 school year, teachers who attended the summer institute will be field testing curriculum materials and providing feedback to the research staff regarding improvements which should be made in these teaching materials. The outcomes of this project should be valuable to schools throughout the Midwest where vocational programs for occupations requiring knowledges and skills in ornamental horticulture are being planned or conducted. The thirty-one source units which teachers are currently field testing cover problem areas in turf management, greenhouse management, landscaping, nursery management, plant propagation, flowers,

and arboriculture. The project staff has developed thirty-five laboratory exercises and experiments designed for student use. These exercises as well as other teaching aids will be field tested and evaluated during the 1966-67 school year and appropriate revisions made before they are released to the public domain. Follow-up visits to each of the schools where institute participants are employed, will be accomplished before the end of the current school year.

**Features**

Two features of the University of Illinois summer institute which were particularly valuable to enrollees were a two-day field trip to horticultural businesses and a two-day presentation and consultation program by a teacher of vocational ornamental horticulture.

The field trip to observe ornamental horticulture business operations was a part of the course taught by members of the Department of Horticulture staff. Stops were made at nurseries, greenhouses, flower and garden centers, a sod farm and research station, and an orchid production center.

The curriculum development course included presentation by Mr. Ernest Stedje, horticulture teacher at the Rockland County Center of Technology and Education, West Nyack, New York.

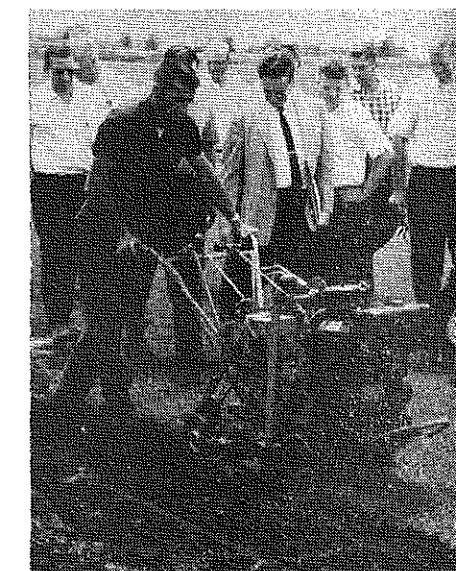
**Summary**

Neither teacher educators in Agricultural Education nor staff members in Ornamental Horticulture at the University of Illinois believe that a single four-weeks course can prepare teachers of vocational agriculture for the instructional job which needs to be done in schools of the Midwest. Several of the participants came to summer institute with a background of experience and course work in horticulture. Others will need additional training in order to provide a broad program in vocational ornamental horticulture at the high school level. Vocational programs designed to prepare students for occupations requiring knowledges and skills in ornamental horticulture will probably be started at the high school level by teachers of vocational agriculture who are willing to engage in retraining of an in-service nature. The ornamental horticulture research program at the University of Illinois was designed to get a few programs started in the midwestern states. The results of the study will be available in the fall, 1967.

Paul Hemp



Teachers of agriculture who participated in the University of Illinois Ornamental Horticulture Institute visited several businesses in Illinois. Here a teacher observes a trainee from Danville Junior College, who is pruning young stock.



Institute participants visited a sod farm and observed sod cutting practices.

## Vocational Agriculture— To Have or Not To Have?

WALTER J. SCHEER, Vice-President—Guidance,  
Boonville Central School, Boonville, N. Y.\*

The question embodied in the topic of this article is confronting many school administrators today as they develop their local school curriculums. In some instances, their decisions have shifted from that of curtailing the vo-ag program entirely to that of limiting the program to a single school system to that of promoting its development in a vocational technical school on a cooperative basis. Thus, the question facing administrators and others may well be: "Vo-Ag—What kind of program? How much? Where?" The purpose of this paper will not be to supply the answers but rather to cite development of the vo-ag program in factors which could be helpful in the local public school.

### For All Students

For a school located in and serving a rural area, it seems that a vo-ag program could be a vital phase of the total secondary school program. At a time when the public schools are serving a greater number of pupils who intend to stay in school for a longer period of time, vo-ag can effectively fill the needs and interests of some of these youngsters. To do, however, requires more than merely offering a program for those students who are unable to cope with the academic phase of the curriculum and, therefore, might otherwise drop out of school. Rather, it must be developed to satisfy the desires or demands of all students, both the able and the less able. Otherwise the vo-ag program will become a dumping ground for the less talented pupils, a condition which will serve as a deterrent in attracting more capable ones to any department so afflicted.

It has been said many times over that vocational opportunities are tremendous for youngster with an agricultural background and with agricultural training—even to the extent that demand exceeds supply. Particularly in the allied areas of agriculture, one finds broad avenues for employment. These opportunities exist for students with varying degrees of training, from either the secondary school or from higher institutions of learning. Therefore, isn't it advisable to encourage youngsters to take advantage of their background and enroll in the vo-ag program, especially if their interests are so inclined?

\* This article originally appeared in *The Empire State Vo-Ag Teacher*, January, 1966.  
—Editor

### Cooperation Needed

The objectives of the vo-ag program may be achieved through close cooperation and understanding among the school administrator, guidance counselor and vo-ag teacher, the latter being the key factor. It has been frequently observed that for the functioning of a successful vo-ag program, the teacher must have a strong inclination for hard work accompanied by long hours, in his effort to demonstrate the values of the vo-ag program to the community.

Among the characteristics the writer feels should be exhibited by the successful vo-ag teacher are the following:

1. Since the vo-ag teacher will find in his classes students of varying abilities from the more capable to the less capable he must be flexible in offering a program which challenges the better student as well as gives encouragement and direction to the weaker student.
2. The vo-ag teacher must sincerely believe his program has something of value not only for the student who desires to further his education beyond high school but also for the one who may wish to seek employment upon graduation.
3. The vo-ag teacher must be willing to devote a share of his time to serve as a resource person in a wide variety of organizations allied to the agriculture field in his community. In this way, he cannot only be identified with his own program but he can also effectively serve the school as its representative.
4. The vo-ag teacher must become intimately associated with his students and their families. In this way, he can serve a useful role in working with the guidance counselor in an effort to better prepare the student for his place in society.
5. The vo-ag teacher must be familiar with agricultural associations beyond the local level and must maintain an up-to-date knowledge of developments in his field. In this way he can view the broader outlook for people entering or working in agriculture and thus, develop his own program accordingly.
6. The vo-ag teacher must realize he is a member of the educational team carrying on the secondary school program. His efforts should be toward demonstrating that his vo-ag program is a part of the total educational program and not one to be promoted for his own ends.

In view of the above characteristics, the author believes that the person filling the vo-ag teacher's position should not feel he is assuming a position similar in nature to that of other members of the teaching profession, and unless he is willing to accept these responsibilities, the success of his vo-ag program could be in jeopardy.

### For College Bound Too

Today many youngsters are furthering their education beyond high school. In this respect vo-ag can serve as a fine background and supplement the academic subjects in preparing a student for college. A happy medium of vo-ag and academic subjects can be arranged for a student with the cooperation of the guidance counselor and vo-ag teacher. For many, a major in agriculture may be sufficient rather than a six-unit sequence. Certainly, it is possible for a student to complete high school with majors in two academic areas, usually math and science, as well as in agriculture. Even though his high school curriculum may be influenced by admission requirements of many institutions of higher learning, there is a program in high school for the student who desires to further his education and still wants to enroll in some phases of the vo-ag program. Opportunities for a student to explore vo-ag programs and still qualify for college should be made available whenever appropriate.

### Area School Affect Vo Ag

The introduction of the vocational area schools will eventually affect the vo-ag program. For some schools the area school program, offered jointly by schools on a cooperative basis, will tend to replace the local program. Certainly this effort, as a means to continue a program on the local level within a school district, is beneficial. On the other hand, it seems that the vocational area school can effectively supplement the local program by offering courses of greater specialization. In this way, the area school can provide terminal education of a specialized vocational nature for those youngsters who may not have the ability or desire to continue their formal education beyond high school.

Teachers and discussion leaders may select from a variety of easy to use lettering methods for producing professional quality overhead projector transparencies of their own design. Although more prepared transparencies are available each year, the desire for teachers to produce transparencies for special classroom needs continues. Frequently, this requires the production of transparencies with lettering. Quality lettering adds authenticity and impressiveness to these visuals.

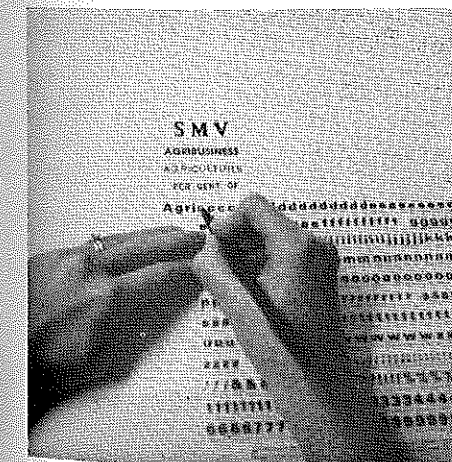
Although most accessible, the office typewriter lettering projects an image too small for easy viewing under many classroom conditions. The following five convenient methods of lettering are very satisfactory for producing masters with a larger lettering:

1. Primer type.
2. Fototype.
3. Transfer letters.
4. Lettering guide
5. Lettering set.

Primer Type, as used in primary readers, is preferred for its larger characters to the more common and smaller pica and elite typewriters type sizes.

Although suitable for limited use, the pica and elite type of office typewriters frequently project too small an image for good viewing. One must realize that viewing distance, projection distance, and quality of transparency will also affect visibility.

Any of the even larger types variously called Great Primer, Giant Primer or Large Bulletin are also satisfactory for transparencies. This size lettering is often used at conventions for lettering the personalized name cards worn by participants.



A. Examples of lettering for transparencies. Different types shown from top to bottom: (1) Gummed stick-on letters, (2) Fototype self spacing letters, (3) Use of lettering guide and lettering set, (4) Dry Transfer lettering, and (5) Primer type.

## Lettering Overhead Transparencies

REED FRANZ, Vo Ag Teacher, Largo, Florida

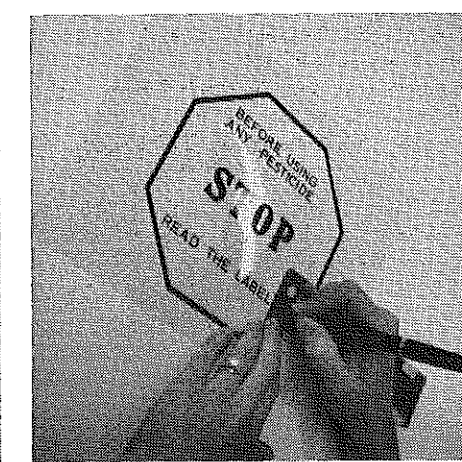
### Using Typewriter

For producing translucent masters with the typewriter, a sheet of carbon paper is placed behind the tracing paper in reverse position so the carbon side is toward the master. In this way, the letter image is imprinted on both sides of the master and does a better job of blocking out light in making transparencies using the Diazo and other process.<sup>1</sup> The typewriter ribbon imprints the front and the carbon paper imprints the back of the master by a single stroke of the key. In some cases, quality may be improved by a second typing directly over the first to darken the lettering

### Help for Hand Lettering

Fototype is self-aligning and self-spacing letters and number characters made especially for overhead projection masters. These are easily assembled and positioned on the accompanying composing stick with transparent tape, enabling the novice to get quality lettering with speed and economy.<sup>2</sup> Fototype is available in many sizes and styles.

Transfer Letters are less permanent. They are applied to the master by individually rubbing the face of number and letter characters specially produced on translucent sheets. These are usually spaced and aligned in proper position by sight.



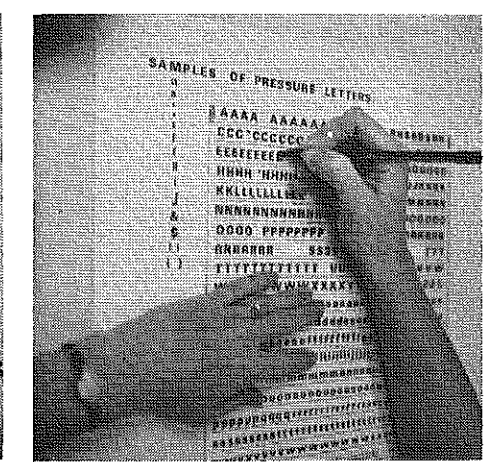
B. A transparency master lettered with gummed stick-on letters and lettering guide. Lettering may be transferred to the transparency, or applied directly as illustrated here, or a combination of the two methods may be used.

Lettering Guides, Lettering Sets and Templates as used in drafting courses are especially suitable for lettering transparency masters. In addition, these sets which come in many sizes work well for lettering directly on the transparency. For this, one may choose to use acetate ink rather than India ink since it will adhere better to the acetate transparency and be more lasting. The colored transparent acetate inks project in color adding to the value of the presentation.

Gummed stick-on letters, which are sold at most stationery counters, are larger and suitable for some lettering occasions. They work well with the Diazo they are opaque and block the light. The writer has not satisfactorily used these letters for producing transparencies in the belt type office copy machines which use the heat reflection principle.

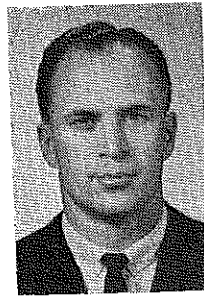
Many teachers have access to one or more of the above methods for lettering overhead projector transparencies. With the increased availability of overhead projectors in the classroom, the teacher can produce and use special transparencies with professional quality lettering.

1. County Agent and Vocational Agriculture Teacher, April, 1962.
2. Technifax Corporation, Holyoke, Massachusetts.



C. Samples of pressure lettering available and an illustration of how it is applied with the blunt end of a ballpoint pen or similar instrument.





Harold R. Matteson

## More Workers Needed in Agricultural Occupations\*

HAROLD R. MATTESON, Teacher Education, Wisconsin (Brazil Project)  
WALTER T. BJORAKER, Teacher Education, Wisconsin



Walter T. BJORAKER

Agriculture businesses are expanding rapidly. As farming technology advances and farmers become more knowledgeable and efficient, they must have businesses and services that keep pace with their needs.

A recent University of Wisconsin study indicates that ten years from now 50 per cent more workers will be required to fill the employee needs of the non farm agricultural businesses surveyed.

This study also indicates that employers of these non farm agricultural businesses placed a high value on employee's ability in public relations and business management skills and/or knowledges.

To meet employer requirements, employees must have technical knowledge, greater skills and advanced technical training to serve modern farmer demands for greater specialization.

In the Wisconsin survey, conducted through the Department of Agricultural Extension and Education, data were collected from 336 employers of agricultural, non-farm businesses in eight randomly selected, non-metropolitan counties.

Employers estimated their projected employee needs and evaluated specified competencies workers should obtain to hold gainful employment and future promotions in these businesses.

### Role of Vocational Education

Vocational educators, during the past few years, have become increasingly involved in discussions considering their role in training students for non-farm agricultural occupations.

If educators do agree that it is the function of vocational agriculture departments to prepare students for these non-farm agricultural occupations, then vocational education administrators must establish curricula built on pertinent, useful courses that will provide competencies students must have to gain employment in these jobs.

\* From the findings of Harold Matteson's Ph.D. Study carried on under the direction of Walter T. BJORAKER.

To explore this question, the Wisconsin study was developed to determine the importance employers of non-farm agricultural businesses place on various competencies as a prerequisite for employment and subsequent promotion with in the business.

In the survey sample, the 336 employers were classified into one of five categories: agriculture machinery sales and service, agriculture supply, livestock business, conservation, crop and forestry and ornamental horticulture.

This technique was used to provide some insight into whether the type of business for which an employer hired, influenced his opinion on the importance of a specific competency.

### Important Findings

The 336 employers surveyed reported having 4594 employees at the present time, with an anticipated increase of 18.1 per cent (5425) and 49.2 per cent (6858) in the next five and ten years, respectively. The machinery sale and services employers, with an anticipated increase of 57.1 per cent in five years and 142.1 per cent in ten years, indicate they will be facing the greatest expansion of the five categories. The group with the smallest anticipated employment increase was the livestock business employers with an estimated 14.3 per cent increase in five years and 31.6 per cent increase in ten years.

Collectively and individually the employers of the five occupational groups ranked mathematics, first; English, second; and economics, third most valuable subjects for students seeking initial employment and subsequent promotion in these businesses. Subjects of least value for employee's initial employment and promotion, as listed by the employers, were, in order, foreign language, history and geography.

There was no consensus among employers in their evaluation of the science subjects biology, chemistry, and physics, or the more advanced mathematics subjects, algebra, and geometry. Employers

in the agricultural machinery and conservation, crop and forestry groups placed a greater emphasis on the need for employee knowledge of algebra and geometry. On the other hand, employers in the agricultural supply, livestock and ornamental horticulture groups felt the knowledge of biology, chemistry and physics was more important than algebra or geometry knowledge, for employees' gaining initial employment and promotion.

Individually and collectively, the occupational groups responded quite favorably to the components of the business management variable for initial employment and promotion. All components received an overall value rating of "some value" or higher for both employment levels. More specifically, for initial employment the employers collectively ranked "making decisions accurately," first; "keeping records and accounts," second; "diagnosing problems and consulting," third; and "estimating costs and buying ability," fourth. For employee promotion prospects, they also ranked "making decisions accurately" first, but placed "diagnosing problems and consulting," second; followed by "estimating cost and buying ability," third; and "keeping records and accounts," fourth.

All components of the public relations variable received a "valuable" or higher rating from the employers collectively for promotion and all but three received this value rating or higher for initial employment. The three components not quite obtaining a "valuable" or higher score were "ability to communicate with non-farm people other than businessmen," "supervising personnel," and "training personnel." The four components of this variable receiving the highest value rating for both employment levels were "ability to communicate with farm people," "salesmanship," "ability to communicate with businessmen," and leadership.

(Continued on next page)

### How Much Vo Ag?

The employers collectively and individually ranked "two years or less of vocational agriculture training" higher than "four year vocational agriculture program." Exceptions to this were the ornamental horticulture employers who reversed this order for both initial employment and promotion and the conservation, crops and forestry employers who shifted this ranking for initial employment only.

The general valuation placed on vocational agriculture training was between "valuable" and "some value" with conservation, crop and forestry employers giving both levels of training primarily a "some value" score. Collectively and by occupations group, the employers surveyed ranked "born and reared on a farm" first, followed by "five to ten years of farming experience" and "worked on a farm two to three summers." The more farm experience an employee had the greater the value expressed by employers for both initial employment and promotion opportunities. The value employers placed on all levels of farming experience ranged between "some value" and "valuable." The employers rating farming experience the lowest was the ornamental horticulture group.

### Conclusions and Implications

There will be an approximate 50 per cent increase in the number of employees needed for non-farm agriculture businesses ten years from now. If the vocational agriculture instructor of the local high schools accepts the responsibility for preparing his students for these job opportunities, he will need to identify the specific types of job which will be available in the local communities and determine the competencies students need to become employed in these jobs.

The employers surveyed in this study did not place a relatively high value on a student's high school vocational agriculture training. This indication should serve as a challenge to educators in vocational agriculture to determine in what ways the needs of prospective non-farm occupational employees could better be met.

There was consensus among employers of all occupational categories that an employee's ability in public relations and business management was quite valuable for initial employment and promotion. A vocational agriculture instructor, while evaluating and modifying his curricular program, should give serious consideration to the inclusion of a unit on public relations and business management in his revised curriculum. Vocational agriculture instructors should become more

## Book Reviews

Rose, C. W. AGRICULTURAL PHYSICS—4401, 21st St., Long Island City, New York 11101: Pergamon Press, 1966, pp. xvi + 226. Price \$3.50.

This is a paper backed book organized in eight chapters dealing primarily with principles of physics applied to the study of soils, crop water use, and plant-water relations. The first three chapters deal with the physical environment of agriculture and provide a background to the literature on the micrometeorology of crops and single plants.

The author has attempted to "bridge the gap" between the secondary level of understanding and the sophisticated research of advanced workers.

Readers of the Agricultural Education Magazine should note that the content of this book does not include application of physical principles to farm mechanics areas of work such as farm buildings farm machinery and electricity.

The book should be a valuable reference for advanced high school and community college students at the technician level.

Dr. Rose is associated with the Division of Land Research, Australia.

Raymond M. Clark  
Michigan State University

Fairley, James L., and Gordon L. Kilgour, "ESSENTIALS OF BIOLOGICAL CHEMISTRY, SECOND EDITION." 430 Park Avenue, New York, New York 10022: The Reinhold Publishing Company. 1966. Price: \$9.00.

The authors state that this book has been written specifically to serve as a text for the introductory course in biochemistry at the undergraduate level. This places the book at the level of advanced high school seniors and post-high school students enrolled in vocational and technical programs. The text is designed to serve students with varying backgrounds in terms of preparation and with a wide diversity of interests.

The text is organized in 14 chapters designed to develop overall concepts and fundamental information of general biochemistry rather than detailed information on a specific organism. This approach makes it possible for an instructor to adapt the text material to specific interests of students enrolled in technical programs leading to employment in a number of agricultural industries where an understanding of certain aspects of biochemistry is essential for success. The text should be a valuable reference for vocational technical schools and community colleges, as well as for universities providing basic general courses in the area.

Raymond M. Clark, Professor, Michigan State University.

aware of the various curricular patterns that have been used to meet similar increased and diversified demands and adopt, possibly with modifications, the one best suited to their situation.

Employers did not place a high value on an employee's farming experience for initial employment and promotion. These responses are consistent with the philosophy set forth by the 1963 Vocational Education Act which stated that a student in vocational agriculture should obtain "supervised work experience." This was a modification of the older philosophy that students in vocational agriculture must carry a "supervised farming experience." As a result, the vocational agriculture will need to be sensitive to the specific experiences needed by each student and attempt to provide this type of experience in accordance to the setting in which he finds himself.

Employers did regard certain academic subjects of more value than others in

preparing students for initial employment and promotion in non-farm agriculture business. These responses should serve as a general guide for counselors whose responsibility is vocational guidance.

Individuals responsible for vocational education program development should consider the possibility of providing high school courses to serve the needs of students in all areas of vocational training. Courses concerning subject areas such as public relations, business management, and vocational mathematics, for example, might more efficiently and economically be taught in public high schools under the auspices of vocational education training rather than anyone specific vocational field. If found to be feasible, a joint effort by educators in each of the vocational fields would be necessary to develop courses of benefit to all vocationally oriented students, irregardless of the specific vocational field in which they were being trained.

# Procedures Employed by Teachers in Conducting Off-Farm Cooperative Work Experience Programs

URBAN E. OEN<sup>1</sup>, Assistant and RALPH E. BENDER, Teacher Education,  
The Ohio State University

Teachers, administrators and cooperating employers engaged in off-farm cooperative work experience programs generally agree upon the difficulties involved and essentials that are necessary in developing and conducting such programs. This was revealed in a study<sup>2</sup> of 31 off-farm cooperative work experience programs in Ohio. Of the 31, 25 were agribusiness and service and 6 were vocational horticulture. A total of 415 students, or 29 per cent of the students enrolled in vocational agriculture at the 31 schools were engaged in off-farm training. The study included a mail questionnaire returned by all teachers conducting programs and an appraisal of the program by way of personal interview of selected teacher coordinators, cooperating employers and school administrators.

## Difficulties Experienced

The teachers, administrators, and employers personally interviewed identified the following as difficulty items in conducting an off-farm program.

1. Lack of sufficient public relations;
2. Lack of understanding of the labor laws;
3. Lack of close coordination of the program between the school and the cooperating employers;
4. Lack of sufficient training programs for on-the-job skill development;
5. Lack of sufficient cooperating stations to meet student interests and needs;
6. Lack of sufficient instructional materials for the related class.

<sup>1</sup> Formerly served as a teacher of vocational agriculture in Ohio. Now an Assistant Instructor in Agricultural Education at Michigan State University.

<sup>2</sup> "Procedures Employed by Teachers in Conducting Off-farm Cooperative Work Experience Programs," Master's Thesis, 217 p. The Ohio State University.

**Essentials in the Program**  
The teachers, administrators, and employers also identified the essentials when conducting a cooperative work experience program. Included are some of the major findings and conclusions of the study.

### • Good public relations

The teacher must take initiative in selling the program to the administrator, faculty, board of education, parents and the community. Such individuals and groups should be kept informed of the developments in the program.

### • Interested students

There must be a need and a desire on the part of the students in the district to participate in the program. Each student should be critically analyzed for interest and competence in the training desired. Choosing students is always a difficult problem. The school has a "public image" to maintain; the image can be damaged from students poorly selected. If a boy doesn't fit, keep him from being placed in the program.

### • An effective and resourceful teacher

The teacher must have the ability to develop and conduct the program. He must know his field and the people to be served well. He must be willing to advance both professionally and technically in his capacity as a coordinator.

### • An Advisory Committee

An advisory committee separate from the over-all department committee can help to establish policies, procedures, and acceptance of the off-farm program. The committee can give a critical evaluation of the proposed program before it is under way. The teachers interviewed indicated the advisory committee should assist in: (1) public relations work, (2) broadening the teacher's contracts, (3) determining on-the-job training stations, (4) evaluating non-farm work experience programs,



Urban T. Oen



Ralph E. Bender

(5) determining the curricula for the classroom courses of study of technical and related information, (6) securing resource personnel to help instruct in related on-job-training, and (7) determining training outlines on job descriptions.

The advisory committee members should be composed of local agribusiness leaders, parents, and former students.

### • Involvement of industry

Members of industry should serve on the advisory committee and also assist the teacher with selected items to be taught in the related class.

### • School released time

All of the teachers, administrators, and cooperating employers interviewed recommended released time from school for on-the-job training, however, 62 per cent of the teachers interviewed indicated that they would not place juniors for work experience during school hours. Sixty-nine per cent of the teachers recommended seniors receive one-half day of released time.

In 55 per cent of the schools in Ohio, students worked more than 20 hours per week-on-the-job. However, the number of hours per week on-the-job recommended by the teachers interviewed ranged from 15 to 25 hours with an average of 18.7 hours. It is interesting to note that 91 per cent of the employers recommended 24-30 hours per week on-the-job as ideal. For the student under 18 years of age, this would be too many hours under the child work laws.

### • Training outlines of job skills

The students on work experience should have a definite training plan including a complete listing of jobs or areas of training that the student should perform. This plan should be developed by the teacher, student, and the employer before the student begins to work.

(Continued on next page)

# Planning Supervised Practices for All

E. G. HENDERSON, Teacher of VoAg, Attalla, Ala.

For many teachers of vocational agriculture the problem of supervised practice is the biggest problem facing them. If we, as teachers of vocational agriculture are to be effective, we must face this problem with a positive attitude. I fear that we have, in many cases, made a survey of our students at the beginning of the year and have found that many of them do not have facilities for a supervised program as many of us knew it in the past. Consequently, we have taken a defeatist attitude and have not explored the possibilities that are actually around us that can serve as a basis of a good supervised practice program.

## At School

### • Sufficient instructional materials and facilities

Adequate and appropriate instructional materials and facilities are essential and should be available before schools conduct work experience programs.

### • Centers for the students to work

The teacher needs to spend many hours with each cooperating employer to properly prepare him in his "new" educational role. These contacts must be made before the students are enrolled. The employer must be convinced that this is a training station and not just a place for the student to work.

### • Sufficient and adequate supervisory visits

Teacher perception of the frequency of supervisory visits and those of cooperating employers were not wholly in agreement. The teachers' range on frequency of visitation was from once every week to once every three months with 33 per cent of the teachers making one visit per month. Sixty-two per cent of the teachers and 58 per cent of the employers interviewed recommended that the teacher visit once every two weeks during the year. They indicated that frequent visitation was necessary to maintain a thorough understanding among the employer, the student, and the school.

Fifteen teachers or 54 per cent had no school released time for supervisory visits. All of the teachers, school administrators, and cooperating employers recommended that teachers be released during school time for on-the-job supervision.

### • Anderson's guiding statements

Included as a part of the study, the investigator had the administrators and employers rate the eighteen guiding statements developed by



E. G. Henderson

truck, or constructing some useful piece of equipment that could be sold as a means of income for the student or for the department.

## Farm Placement

The placement of boys on farms is an invaluable tool if used wisely. Many urban students are more interested in this than some of our rural students. This may be the only opportunity for many urban boys to get first hand experience and information in production agriculture. This may be the means whereby a student decides to pursue a course in agriculture or that he is not equipped one way or another for a vocation in the field of agriculture.

## Ag Business

Agriculture business appears to be the solution for supervised practice program in many cases. Many of our students who do not have the financial resources to enter into the vocation of farming, yet have a real interest in agriculture. They can be trained for a life's work in some other agricultural occupation that will provide satisfaction and adequate income to provide a wholesome life for that student and his family.

With a smaller percentage of total population engaged in production agriculture more jobs are being created in marketing farm products, agriculture supplies, and services, processing of agricultural products etc. In addition new jobs that have not existed before are being created daily. Business people are most willing to cooperate with our program in training interested students for jobs within their businesses.

Students are placed in these businesses with the understanding that they are engaged in a training program rather than having a parttime job to earn spending money.

We can see then that supervised practice programs can be worked out for all students of vocational agriculture if we will take time to recognize and analyze opportunities that are around us.

Anderson<sup>3</sup> for conducting work experience programs. (These were reported in the May, 1966, *Agricultural Education Magazine*.) A positive correlation was found between the combined teacher ratings in Anderson's study and the combined ratings by administrators and employers, indicating that the statements developed by Anderson are important for conducting programs.

<sup>3</sup> Benard Harold Anderson, "Guidelines for Planning and Conducting Cooperative Work Experience Programs in Vocational Agriculture," (Unpublished Ph.D. dissertation, Department of Agriculture Education, The Ohio State University, 1966) pp. 137-143.



## A Bit of Truth or the Whole Truth?

HOWARD SIDNEY, Chairman, Agricultural Division, State University of New York  
Agricultural and Technical College, Cobleskill, New York

A Training Institute for Teachers of Technical Programs in Agriculture was held at Cobleskill Agricultural and Technical College August 1-5, 1966. The Institute was planned to explore and discuss:

1. The need for agricultural technicians,
2. facilities necessary for instruction,
3. faculty for vocational and technical instruction in agriculture,
4. effective curriculum planning,
5. supervised occupational experiences as part of agricultural technical curriculums,
6. organized youth activities at the post high school level,
7. the importance of advisory committees, and
8. occupational opportunities for graduates from technical programs in agriculture.

The Institute was initiated as a result of current developments in agriculture and the renewed interest in technical education.

We are aware of rapid changes in agriculture due to new technologies, methods, economic and social changes, government planning, leadership from education and industry and from the combination of these forces in our society.

The results from the conference were both enlightening and motivating. The growth of our population, industrial expansion, and changes in agriculture are having a dramatic impact on our country's educational institutions. Post high school vocational and technical institutions and colleges are being established throughout the nation. Therefore, this is the time to initiate new programs for technical education in agriculture and related agricultural occupations.

There are six two-year Agricultural and Technical Colleges in the State University of New York. These six schools have been in existence over 50 years and have passed through many stages of development, including the offering of high school vocational agriculture, short courses, one-year programs, and are presently offering technical curriculums in agriculture awarding the Associate in Applied Science Degree. With this history as a background, the five-day institute was planned at Cobleskill to use the resources, facilities, and faculty as a basis for discussing factors and information pertinent to teachers of technical programs in agriculture.

Eighty representatives from 40 states and guests from two foreign countries attended the conference. This included 20 State Supervisors of Agriculture, and 60 instructors of technical programs in agriculture. Businessmen and other interested individuals attending the conference brought the total to about 100 different individuals. This combination of experienced agricultural teachers and men from agricultural industries employing technicians brought a wealth of information together for the conference.

### Need for Technical Education

At Cobleskill we are aware of the acute shortage of graduates from technical programs in agriculture. During the past year there were as many as seven to ten position openings for every college graduate in a number of the specializations.

Time was planned at the conference for men from various states to report on the current status of technical education in their state. It was evident from these reports that this shortage of agricultural technicians is nationwide. The reports were similar from all of the agricultural institutions in that they indicated there are many more positions available than graduates.

Dr. S. V. Martorana, Executive Dean for the Two-Year Colleges, State University of New York, was the keynote speaker on Technical Education. He broadened his topic to include the need for comprehensive education at the post high school level and also in our secondary schools. He cited a recent study made in New York State documenting the dimensions of technical education and technical manpower requirements in the State. This study reflects the needs of the nation at large as well as those of agriculture. The current preparation of people for technical occupations is not at a level sufficient to maintain the status of our present level of production.

Dean Martorana explained the objective to locate two-year colleges at all points in the state in reasonable commuting distance for high school graduates. He visualized this concept for the entire country. This would include a strong broad program in technical and vocational education, including offerings related to agriculture, as part of a sound statewide educational program. Dr. Martorana stated: "If in truth we are going to fulfill the ideal or the

principle that we are going to give as broad a choice of opportunity to students as possible, and do this in enough places in the state that unrestricted educational opportunity beyond the high school actually results, there will have to be curriculums offered in agriculture as well as in all other major fields of work."

Alvin E. Oliver, Executive Vice President, Grain and Feed Dealers' National Association, spoke on: "The Importance of Technical Training for Grain, Feed, Seed, and Farm Supply Businesses." He described the size of the nation's largest industry—the food business—and stressed the need for personnel at the technical level. The companies providing the means for processing, purchasing, conditioning, transporting, milling and services between the farmer and the consumer required many trained technical people. To meet this need, Mr. Oliver and Dr. Ray Clark, Michigan State University, have developed a curriculum guide for grain, feed, seed, and farm supply businesses.

Floyd S. Dubbin Jr., Star Farmer of America, 1965, spoke relative to the importance of technical training for men managing farm businesses. He summarized his remarks by stating that in the future farm owners and managers are going to find a technical education is necessary for successful farm management.

L. R. Kanetzke, Executive Assistant to the President of the J. I. Case Company explained the need for agricultural technicians in the farm equipment industry. Agricultural technicians are necessary, and they hold a key place in the manufacture and service of farm equipment in the dealerships which are so important to our farmers.

Ray Brush, Executive Secretary to the American Nursery Association stressed the importance and value of technical education. He also explained the value of occupational experiences in the preparation for graduates who plan to enter the Ornamental Horticulture and Nursery businesses.

Reports from the leaders in industry, and educators, reinforced the same fact—there is an urgent need for trained personnel in the technical areas for farming and agriculturally related occupations.

### Facilities

After seeing instructional facilities at Cobleskill and Morrisville Agricultural and Technical College, the members attending the Institute summarized in a committee report what is needed for adequate facilities for laboratory experiences. Even though occupational experiences can be provided as cooperative programs with industries and farm owners, laboratory facilities are still a necessity to effectively carry out instruction related to classroom activities. The capital investment can be limited relative to the institution, the type of farming in the area, the climatic conditions, and the overall plan for the development of the campus. In some instances it is possible to acquire less expensive land and buildings in providing the basic essentials. Careful planning of laboratories is necessary to provide adequate floor space, facilities for unloading and moving equipment, and consideration should be given for acoustics, outside noises, window space, ventilation, air conditioning, storage, and study and office space.

The farm must be supervised and operated by hired personnel under the supervision of the instructors so that the farm is used for laboratory experiences as related to class instruction.

We may find that administrators are better informed about laboratories for chemistry, office machines, and the general laboratories than they are about agricultural facilities. It is the responsibility of those in agriculture to acquaint administrators with the needs and to ask for what is necessary to provide adequate facilities.

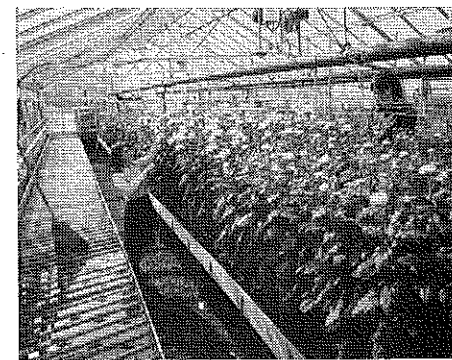
The farm laboratories, such as farm crops and livestock, must be located so as to be readily accessible to the students and faculty. They must be also reasonably close to facilities common to all students, such as dining halls, dormitories, the library, and the recreational buildings.

It is important that the agricultural students be part of the total student body, and not separated because of curriculum or facilities.

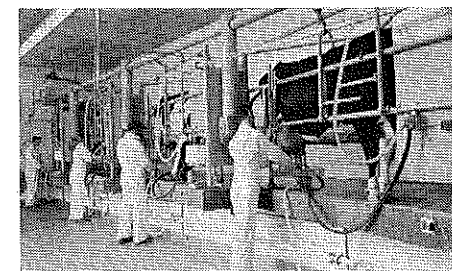
### Faculty

The faculty is the heart of the instructional program. Expenditures of funds for buildings and facilities will not accomplish the objectives unless there is excellence in teaching. The consensus of opinion at the Institute was that there is an extreme shortage of qualified instructors for technical and vocational education. The rapid development of post high school technical education has made the problem more acute.

It is important in hiring faculty to make all possible contacts with colleges, industries, and professional groups. It



Students working in one of four greenhouses as part of required horticulture lab.



A living lab for students in dairying.

is important to attract instructors who are prepared professionally, who have had the experiences to make them competent, and who have an understanding of technical education in agriculture. When contacting faculty for position openings, we must clearly define the responsibilities and publicize the work relative to the opportunities the teacher will have to serve young people in agriculture.

One of the best sources for securing instructors is from the teachers of vocational agriculture. In the future we may also find more qualified retired people who can and will be willing to make a contribution. The whole matter of faculty requires the attention of professionals in our colleges and universities. We should attempt to establish programs especially designed for people who desire to enter the profession of teaching in agricultural schools at the post high school level. To make this instruction meaningful, it will be necessary to seek professors who have had experience in post high school agriculture, and have an appreciation for technical education.

Men attending the Institute felt that it was necessary for leaders on a national level to discover and motivate methods to eliminate state tuition so as to encourage professional improvement. We must cultivate men in industry to assist in the search for and preparation of teachers. I am sure that we could interest such men in scholarships for teacher-training to advance technical education.

Members present strongly recommended that the United States Office of Education initiate frequent meetings of the type held at Cobleskill to coordinate, develop, bring up-to-date, and keep the people interested in technical education informed as to needs and changes taking place in industry.

The question of salaries as a means of encouraging and holding professional people was raised. It was recognized that effort must be exerted to insure the professors of agricultural technical programs competitive salaries, comparable to those received in industry. It was felt that the shortage of trained personnel for positions in agriculture would make it increasingly difficult to hire competent, well prepared instructors for technical courses in agriculture in the next few years.

### Occupational Experiences

Supervised occupational experiences are frequently part of required curriculums. Examples were cited of institutions requiring occupational placement for work experience as part of a summer program. In other schools this is being accomplished through adjusted schedules which allow a specific time away from the campus for experience. A written agreement between the student, the instructor, and the employer is essential. Students working in industry should receive wages definitely agreed upon and uniform for similar work experiences. Follow-up visits by the instructor while the student is employed are essential. Credit should be recognized and given for courses, as earned, off campus. Student reports, both written and oral, are a necessary student activity.

Members of the Institute indicated that occupational experiences have become increasingly important.

Students are entering agricultural technical curriculums from different backgrounds as compared to a few years ago, and with less experience related to careers. Many students in the future will be coming from urban areas where occupational experiences are almost impossible to obtain, therefore, supervised work experience must be included as part of the instructional program.

### Youth Activities

There was an interest and a feeling of awareness that youth programs should continue beyond the high school level. These programs should be developed and directed toward specific needs of the particular age group, without weakening the present organizations committed to the same purpose at this or other age levels. It is important that the post

(Continued on page 184)



Howard Sidney

*(Continued from page 183)*

high school groups continue the development of leadership for constructive, organized, activities. Youth organizations can assist students in developing an appreciation for and a feeling of dignity for their work, and an awareness of the need for contributing to their vocation, family, community, and the nation. Directed youth activities can also help students develop desirable personal and occupational habits.

Through these organized groups the students have the opportunity to initiate activities to advance agriculture, to cooperate for the common good, and to develop a better understanding and relationship between rural and urban groups. A committee on youth activities recommended that local chapters or groups separate from, but in harmony with, the present Future Farmers Association can be developed to serve the needs of youth beyond high school.

State and national agricultural education leaders and supervisors will be encouraged to work with area vocational schools, technical institutions, and junior and community colleges in establishing, supervising, and coordinating the development and operation of such organizations. There is sufficient need and interest on the part of students and instructors in post high school vocational technical programs in agriculture to develop activities outlining the aims and purposes, the nature and scope for a state and national organizational structure.

#### Advisory Committees

There are four Advisory Committees in the Agricultural Division at Cobleskill Agricultural and Technical College. One for Dairy and Food Science, a second for Agricultural Engineering Technology, a third for Ornamental Horticulture and a fourth committee for Animal Husbandry, Agronomy, and Agricultural Business. Three members from these committees spoke briefly at the Institute.

The members of these committees are appointed by the College Council after being recommended by the faculty. Each appointment is of two years duration and generally the person appointed does not serve more than three consecutive terms.

In recommending committee members, faculty seek men who are leaders in their business fields, and also in civic affairs, and men who are in positions to render sound advice to the faculty as well as to be good public relation con-

geographic areas from where our students are most likely to come. Sometimes members are selected because they do not know, or have not become acquainted with, the agricultural program at the college. Having them act on the Advisory Committee is an excellent means of acquainting them with the programs. It is important to keep the advisory committee members active and interested in the college. This requires regular meetings with the agenda prepared in advance in order to give them the opportunity to participate effectively. The meetings are planned by the faculty jointly with the advisory committee members, with items of worth-while interest on the agenda.

We have found that the advisory committees at Cobleskill have been a pleasant and satisfying experience for the faculty. Practically all of the members do attend the meetings and take an active part in the discussions. We have received valuable information from these committeemen and in return, they have been an active group in informing the public about technical curriculums in agriculture being offered at Cobleskill.

#### Views from U. S. Office

Neville Hunsicker, Chief for Agricultural Services, summed up the conference by stressing the "Unlimited Opportunities" for graduates from technical programs in agriculture. He stated that post high school institutions are being established all over the country and that there is unlimited opportunity for agricultural education. The increasing world population, the decreasing food supply, the shortage of agricultural technicians, and the establishment of post high school institutions at this time makes it imperative that we start additional curriculums for technical education in agriculture, now.

He charged us with the challenge and responsibility of working closely with agricultural businesses, industries serving agriculture, educators in other fields, and taking all the necessary steps to establish and develop programs necessary to meet the needs for agricultural technicians in our society.

We must promote, establish and organize agricultural education in post high school institutions. There will be difficulties to overcome such as the shortage of faculty, facilities, funds, and the job of informing and convincing men in responsible positions that these programs for technical agriculture are necessary. It is the responsibility of agricultural

to secure the cooperation of men in key positions in education and agriculture.

We must realize and accept the fact that many people will not be acquainted with what we are trying to accomplish. Faculty and post high school educators in institutions primarily established for technical education will not necessarily understand the basic essentials of technical education and how to teach occupationally oriented students. A continued lack of understanding will be our fault if we make no attempt to correct it. It will be necessary to speak out firmly with facts and information to educate whenever it is necessary. We must make it our business to see that courses in the general studies provide skills in communications, applied sciences, and related courses which are necessary for quality instruction and excellence in technical education.

#### SUMMARY

My summary of this conference is that I had a feeling there was a bit of truth about the need for skilled agricultural technicians. After listening to the speakers at the conference and visiting with people from many other schools, I found this truth confirmed over and over again. To me, a bit of truth, repeated, verified, and stated from many different reliable sources and from men with years of experience makes a whole truth.

I am dedicated to this whole truth.

Therefore, as professional people in the business of agricultural education, we do have unlimited opportunities and we do have a big challenge before us today to promote post high school programs for the preparation and education of technicians in agriculture.

Immediate action is necessary on our part to serve young people who are interested in agriculture. We must provide sound programs for technical education in agriculture. As we strengthen the agricultural industries in the United States, we will provide a better future for agricultural technicians and the entire population of our country will profit from the higher standard of living resulting from efficient agriculture. We are most fortunate, and we can be proud to be a part of this most vital industry which is the basis of the prosperity and leadership in the world that the United States enjoys. There is no greater service which we can render to our nation and the young people who will be our students.

This is a whole truth.

## Adult Education Depends Upon the Teacher

P. H. ALSABROOK, Vo Ag Teacher, Notasulga, Alabama\*

Our programs in adult education will be just what we want them to be. Success, or the lack of it, depends on our interests, attitudes, and efforts, in adult work.

Teachers are spending much of their time and talent nowadays adjusting themselves and their programs, and revising their teaching methods, in keeping with the new concepts of agriculture. All this business of revision, adjustment, and change is the shuffle in which some people feel adult education could become lost.

Much of every agriculture teacher's program, his ideas, and teaching techniques have become obsolete. He is faced with a difficult challenge if he wishes to continue offering the kind of education that is based on the needs of his students.

This challenge to revise, to learn new methods, to develop new programs, and to keep abreast of new occupational opportunities in agriculture must receive much of every good teacher's attention. Consequently, other areas of his work may sometimes suffer from lack of enough attention. Adult education is one of those areas, and it may be one of the easiest to overlook in the rush of the new shuffle in vocational agriculture.

There are some indications that adult education is, in fact, being lost in the shuffle, and some criticisms of the way adult work is being handled by teachers. Some of these are quite justified, and sound. A few of them are listed below.

#### Adult farmer program not growing.

In some States, or areas, this may be true. Generally, there has been an overall increase in the number of adults enrolled during the last 10 years. There have been some years when the figures either stood still, or backed up, but the enrollment picture is one of general growth. That this growth has not been faster may be due, in part, to a duplication of educational services. Commercial men, specialists in their fields, who represent agricultural chemical companies, fertilizer manufacturers, machinery and equipment concerns, and many

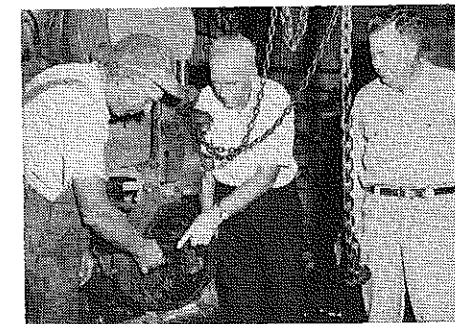
others are available today to provide on-the-spot "education" for adult farmers. The adult education facilities of the land grant college extension services and our vocational agriculture programs find much of our course material duplicated by these specialists.

#### Lack of Interest.

It is probably true that there is a lack of interest in adult education among teachers in certain communities. There are many reasons for this, and there always have been, and always will be, areas of agricultural education that receive less interest and attention in some localities than they do in others.

#### Overloaded.

An overloaded work schedule, that has a teacher so busy trying to do something with every phase of agricultural education that he can really not do an adequate job with any phase, has an adverse effect on the entire program. The adult education work is not the only thing that suffers from having too few trying to do too much; all of vocational agriculture takes a loss. In my opinion, however, the adult farmer's need for continuing education is not being lost in vocational agriculture's present-day shuffle.



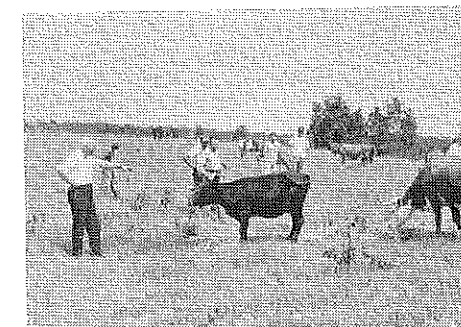
TRACTOR MECHANICS classes can help develop a strong adult farmer program, because it is an area in which the enrollees are keenly interested.

#### Enrollment Increase

In many States the adult farmer enrollment figures have shown a steady increase during the last decade. Over the same period of time the number of adults enrolled in Alabama has more than doubled. This has taken place within a period of years that has seen a 50-percent decrease in the total number of farmers. And, those adults who are not enrolled in regular classes are receiving individual instruction through the visits made by vocational agriculture teachers to their farms. These people are not listed on the official report forms which give the enrollment count.

Year	Alabama	National
1956	6,447	325,299
1957	8,075	316,608
1958	12,751	314,114
1959	16,768	290,773
1960	16,476	332,277
1961	17,406	342,566
1962	16,788	348,546
1963	16,524	339,302
1964	16,301	358,786
1965	16,320	No figures available
1966	16,324	No figures available

These figures indicate that there has actually been a very strong increase in the percent of adult farmers who have received agricultural instruction. In this case, the percent is the thing; there are fewer farmers nowadays, but more of them who have received training. Regardless of the indications and the criticisms, then, it appears that the case in favor of providing adult education in agriculture has not yet been lost in the shuffle.



FIELD WORK, such as culling brood cows, can sometimes combine both adult and all-day student teaching activities.

\*Editor's Note: Pat Alsabrook died suddenly while attending a football game at the high school where he had been teaching more than 20 years.

## A Course Combining Production and Industry Agriculture?\*

Since the passage of the Vocational Education Act of 1963, several approaches have been attempted in planning programs for students of both production and industry agriculture. Some of these programs have been successful, others less successful or even failed because of differences in situations. There are still some teachers searching for methods of implementing a program for their locale.

There are probably many methods or approaches for planning such a program. Most of these will work satisfactorily in some situations, but no specific one can be claimed as a model with which to tailor all programs. There should be little complaint with a program which fulfills the needs of those involved, but there should be much concern over a program which does not meet this criterion. Teachers are faced with the problem of choosing the best method of planning a program in vocational agriculture to implement the Vocational Education Act of 1963.

### Different Approaches

Many curricula have been revamped in order to extend agriculture to all persons included under the new vocational education legislation. One approach has been the addition of separate courses to high school curricula for students whose occupational objectives lie in the realms outside of farming.

Some of these courses have been in the field of agricultural business, mechanics, processing, service, ornamental horticulture, etc. These courses are organized and taught as if every student enrolled had an occupational need for that given area of agriculture. This assumption is on the same basis that was used for many years to justify teaching production agriculture to all students, regardless of their occupational objective.

Another approach that has been used is the breakdown of the vocational agriculture curriculum into separate semesters or units of courses, each a specialized area within itself. Students often take two or more of these units during one year's program. This gives the students a chance to choose or be counseled into areas that are congruous with their occupational objectives.

\* Editor's Note: The covering letter got separated from this article. If the author will write me, he will be given credit in a future

Teachers with students of varied goals have resorted to individual or small group study or even giving all the instruction on the job with no formal classroom instructions. These approaches could readily lead to confusion and criticism if not administered and coordinated effectively.

All of the approaches which have been used probably are adaptable to some situation, but there are situations where the explained or implied programs will not meet the needs of those involved. Some of the programs will work best in large multi-teacher departments where there is a diversity of students, curricula choices, occupational objectives, training stations, and flexibility in scheduling. They would meet their most severe test in small rural communities where many of the necessary facilities are limited. It would be very difficult for a teacher to make a complete transition from the conventional to a different and more up-to-date program in a community and school which was rather conventional in its attitude and administration.

An approach which may have merit in some of these difficult situations is the "integrated course approach." This method actually integrates into a single course both production and industry agriculture. This approach has already proven to be very effective in planning curricula in vocational agriculture. Most of these courses have been integrated in areas of production agriculture. There is no plausible reason why industry agriculture could not be treated in the same respect. This, in actuality, would be a vertical integration of both industry and production agriculture, and at the same time continue to make use of horizontal integration of areas in both fields. This approach permits the teacher to move into the area of agricultural industries in a small way, anticipating eventually to expand the program to make full use of the intent of the Vocational Education Act of 1963.

### Course Content

If this approach were used, the curriculum would need some revision. It would not demand any drastic changes. Agriculture I and II should be basic agriculture which includes fundamentals and principles slanted toward both production and industries in agriculture. Many special problems and cases could be used which would include both aspects of agriculture. These courses should still be production oriented since this is the core of any form of agriculture. Agriculture III should move into the field of applied agricultural sciences, management, mechanics, and orientation for agricultural industries.

Agriculture IV would be the integrated course in both production and industry. It would be organized for students interested in both phases of agriculture. Students with needs and interest in the production phase of agriculture would conduct supervised farming programs and those with similar characteristics in agricultural industries would be placed in some form of a business for a placement employment experience program. Since school release time is questionable in some situations, there may be little need for such an activity in order to conduct the placement employment experience program. School release time still would be permissible, but students could work after school, on holidays, and during the summer vacation in order to meet the placement employment requirement. If the situation existed where placement employment opportunities were limited, the students could conduct small supervised farming programs in conjunction with the placement employment programs.

In an integrated course of this nature the classroom instruction would need to take a different slant. A common core of instruction would be determined as a requisite for students with an occupational objective whether it be in production or industry agriculture. This

(Continued on next page)

## FIVE, FOUR, THREE, TWO A Modern True Story of Vocational Agriculture

core should comprise the largest block of the classroom instruction and should be taught to the entire class. Not all of the needed training can be given in this manner. There will be some jobs which should be learned individually, in small groups, or on the job. Even if this approach is used, there should be some organization to the learning process.

The common core of instruction which would be taught to the entire class should be agriculturally oriented. Technical agriculture should comprise at least 50 percent of the course or it may lose its identity as being agricultural in nature. Some of the following agricultural jobs could be taught:

1. New developments in animal science.
2. New developments in crop and soil sciences.
3. How to keep abreast of changes and innovations in agriculture.
4. Agricultural laws, including Income Tax and Social Security.
5. Obtaining and using agricultural credit.
6. Record keeping and accounting for agriculture.
7. Agricultural mathematics.
8. Agricultural chemicals and their uses. (This would include veterinary supplies.)
9. Principles and applications of marketing.
10. Installation, operation, and maintenance of agricultural machines and equipment.

The industry phase of the course could include the following jobs:

1. Obtaining a job.
2. Work laws.
3. Business procedures.
4. Salesmanship.
5. Human relations.
6. Advertising.
7. Learning about products and services of the industry.

It is obvious that one course could not include all the suggested areas, but the ones with the greatest need should take priority. If students have additional needs, they could use other methods which have been discussed in learning or developing these skills.

### Conclusion

An integrated course of this nature can be justified; it can be tailored to meet all minimum requirements for vocational agriculture. It may not meet the needs of the students interested in

There were five departments of vocational agriculture in a rural county. These departments had been a major part of the high school program in these schools for many years, practically all the boys enrolling for one or more years during their high school days. Adults were enrolling in all of the departments. Considerable pride seemed to be held for these programs.

About six years ago these five schools were consolidated into one high school. The teachers of agriculture played an important role in the consolidation movement, working with the adults in their respective communities in making the change to the larger school. Considerable community study was made by these teachers.

The teachers put forth much effort to develop a dynamic 5-man department of vocational agriculture in the new school. A visit to the new department would clearly indicate that a good job was being done. Through specialization, the teachers felt that they were all better teachers than in the separate schools where they did all the teaching in all areas.

agricultural industries or production agriculture as well as separate courses in those areas. It may meet the needs better than teaching industry agriculture to all students, including those with needs in farming, or teaching production agriculture to those with similar needs in occupations other than farming. Many small rural schools that attempt a separate course in agricultural industries make few plans on the advanced level for the students with needs and interests in production agriculture. The same criticism could be made toward the school whose curriculum is still geared for production agriculture.

The ultimate goal of organizing an integrated course in both phases of agriculture would be to move eventually

Well, to make a long story short, within the few years already past, the five teachers became four, the four teachers became three, now they are two. Many reasons for this, and this is not the place to discuss them. The major point of the story is that this rapid reduction of teachers has happened with little or no protest from anyone in the school district. It could be safely predicted that if one of the teachers in one of the schools before consolidation had been dropped that a protest would have been heard all the way to the state capital. In fact, there have been just such cases in previous years. But in the new setting they slipped away practically unnoticed.

The moral of the story is that there did not develop as important place in the new setting as the teachers of agriculture held in the old setting. Of course, there is the possibility that this could not be done, but obviously it wasn't.

Cayce Scarborough

into a program where there would be a separate course for both phases of agriculture. It would be better to start small and to move toward larger goals than to start large and have adverse affects. A class of fifteen students would be an ideal class for an integrated course. Five of these could be placed in placement-employment experience programs and the others could conduct supervised farming programs. It may be difficult to start a program in some schools and find placement employment for a complete class.

It appears that this approach may have been overlooked by many teachers, but may have some possibility in situations where other programs encounter difficulty because of many varied factors.



## Farm Management Program for Young Farmers\*

GILBERT L. MATHIS, Economics Department, Murray State University

One of the major concerns of agricultural educators is that of improving farm management instruction in young farmer programs. Some of the basic questions to be answered are as follows: What subject matter areas should be taught? How should the program be organized? What age group should be included? What should be the role of social activities in the program?

To contribute to answering these and other pressing questions a study of "Managerial Perception and Success in Farming" was recently conducted. This study was based on data secured from 125 young farmers in 35 Ohio counties. Following are some implications, based upon the findings of the study, that apply primarily to programs in vocational agriculture for young farmers.

### Problem Areas

Nine farm management problem areas which young farmers encounter in their relationship to the farm firm were identified by a factor analysis technique. These were categorized as follows: (1) resource acquisition, (2) records, (3) adjustments, (4) family planning, (5) production, (6) money management, (7) limiting factors and tolerance, (8) retirement and transfer, and (9) marketing. Record keeping and planning for retirement and transfer emerged as separate problem areas from those listed in the reference materials.

Attention should be given to these problem areas by those concerned with instruction in farm management for young farmers. Researchers and farm management specialists should make these problems the object of further research so as to seek better ways of arriving at their solution. Program directors, supervisors, and teachers should have a thorough knowledge of farm management and the benefit of in-service-training to become more effective in teaching basic management principles and in solving farm management problems. The identified farm management problem areas should be included in the teacher's program of instruction. The teacher



Gilbert L. Mathis

should make use of specialists or resource persons in technical subjects or in areas where he has limited experience. He should work with other agencies and organizations and use the best resources at his command to promote an effective program. This obviously says the teacher should have sufficient time for on-farm instruction so he can work with the young farmer and his wife on an individual basis in solving the particular problems they encounter.

### Planning

The evaluation of young farmer instruction in farm management indicated the need for programs in which more time could be spent dealing with various managerial problem areas.

Programs of instruction in farm management for young farmers should be planned on a five or more years horizon instead of a weekly or yearly basis. This would provide enough time for a thorough analysis of the farming programs of the young men, ample time for major changes to be made, and sufficient time for evaluation of the practices and changes in the program. Time could also be given to teaching economic principles which serve as the basis for decision making. Information concerning new innovations, and technological and institutional changes could be interwoven throughout the program of instruction.

### Classes Based on Need

If there is a sufficient number of young farmers, the program should be divided into two or more classes in order to meet the needs more effectively. Young farmers' interests, goals, resources, farming status, degree of activities, and farming experiences vary with age. For example, the net incomes of young farmers between 18 and 23 was \$2,522 while it was \$4,837 for young farmers between the ages of 30 and 35. The net worth for the two groups were \$22,261 and \$44,519

respectfully. Also the problems which young farmers at different ages and degrees of establishment in farming encounter call for different levels of knowledge, skills, and resources to solve.

Although these are not sacred numbers, a possible division might include those from 18 to 24 in one class and those 25 to 35 in another class. This would enable the teacher to better meet the needs of the men in each group. For example, more time might be spent planning enterprises, organizing a farm business, and getting established in farming with the younger group while the older group would be concerned with more advanced operational problems. In addition, the social needs of the groups would be different and class participation would likely be greater if the young men are in class with their contemporaries.

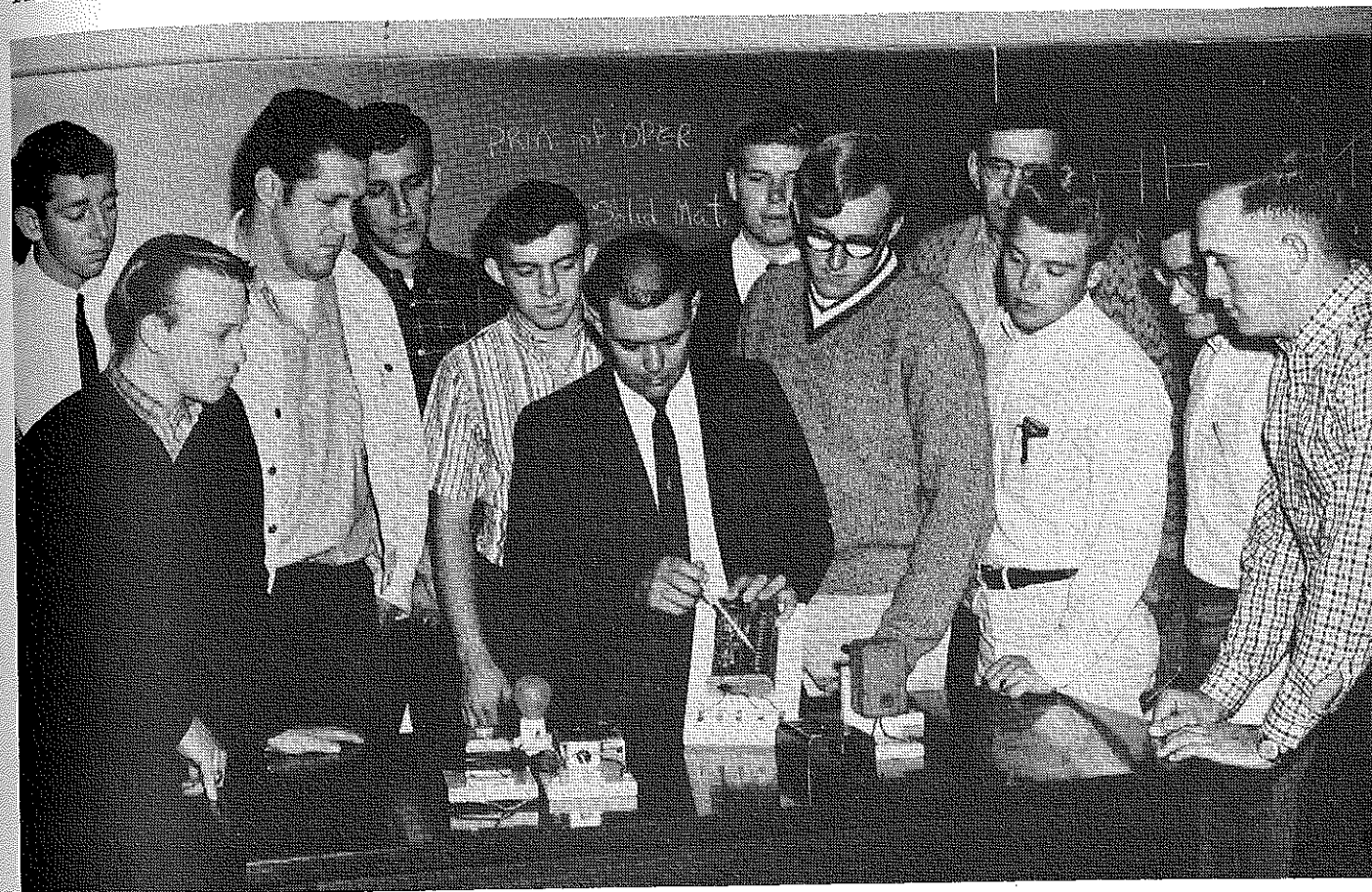
### Social Activities

The ratings given the young farmer program by the young men imply that the young farmer programs should be designed to provide social activities for the young men and their families. Time should be given at class meetings for communication and exchange of ideas. Tours of members' farms, to local and state activities, and to out-of-state events should be planned and promoted. Activities involving both the young men and their wives should be an important part of the program. Also implied here is the importance of an organization such as the Young Farmer Association in Ohio. This organization provides an opportunity for social functions, additional educational activities, and the development of leadership among the young farmers.

### Goals as Determiners of Action

Goal orientation and goal values were found to be basic to management. This fact is significant to administrators, teacher educators, supervisors, and teachers in agricultural education and extensions as well as young farmers. Agricultural educators should be aware of the importance goals have on decision making. Teachers of agriculture and extension specialists should be taught to establish worthy and realistic personal, farm, family, community, and monetary goals. The young farmer's family, especially his wife should be included in the formulation of these goals. They should be led to evaluate these goals carefully and place the proper emphasis on their importance in helping them to reach their long range objectives. Then they should be led to formulate detailed plans on how they are to attain their goals.

(Continued on next page)



Controls for Automation in Agriculture is the subject of agriculture taught to pre-service teachers by Robert Benson, Graduate Assistant, Department of Agricultural Education, The Pennsylvania State University. Photo by F. Anthony.

The findings relative to goal orientation and goal values also indicate that farmers have nonmonetary as well as monetary farm goals. Other factors enter into the decision making process such as risk, amount of leisure time, and personal preferences when considering among alternative courses of action. Also, as the manager of a farm is not usually free from family influences in making decisions, the wants and needs of other individuals making up the managerial complex are expressed. Many of these wants and needs are expressed as social goals, which usually require finances to attain. Thus, farm goals become a means of attaining the social goals which might explain the lack of correlation between monetary orientated goals and certain success factors.

### Perception and Performance

There was a positive correlation between managerial perception—the young farmers' ratings of their ability to perform managerial tasks—and success in farming as measured by monetary and nonmonetary criteria. This correlation was made by analysis of variance technique. The exception was a negative correlation between the rating on record keeping and days of vacation as a measure of success.

This might be explained in that young farmers who keep good records are also conscientious about other aspects of the farm business which result in less leisure time for vacations. Teachers of agriculture should be aware of the various managerial tasks which young farmers encounter and should attempt to get young farmers' perception of themselves as managers. This would give the teacher an idea of strengths and weaknesses of total performance. This would also enable the young men and an evaluation of their ability to get an indirect evaluation of instruction in farm management and would aid in designing a program to meet the needs of those in his class. A rating of managerial abilities by the young farmers might help them formulate felt difficulties into problems and cause them to become sensitive to the need for further exploration into other possible courses of action. There is evidence of a correlation between years of formal education and young farmer classes and farming status and farm goal attainment. This should reinforce the teacher's and young farmer's belief that the program for young farmers is valuable and should inspire them to plan more challenging programs in farm management.

### Summary

It is apparent that increased emphasis should be given to instructions in farm management for young farmers. Agricultural educators should focus more attention on organizing more effective programs and preparing better qualified teachers to implement such programs on the local level. Teachers should have the opportunity to participate in work shops and in-service-education programs to help them become better equipped to work with young farmers. Quality programs in farm management imply that individual teachers will be working more intensively with fewer young men. School officials and university personnel should be advised of the importance of the program and encouraged to promote multiple teacher departments or team teaching efforts to give sufficient time for young farmer work.

The importance of young farmers to our economy is evident to all of us. It is the responsibility of agriculture education to provide the best possible program in farm management for young farmers to help them be better informed and more productive citizens.

\* Ph. D. Degree Study, Ohio State University, Columbus, Ohio, September 1966, 142.

# Making Sense of the Census

RALPH J. WOODIN, Teacher Education, Ohio State University



Ralph J. Woodin

Beginning in April of 1966, preliminary data for each county in the United States became available from the 1964 Census of Agriculture. By this time, reports are available for all counties in all states in the nation.

Unfortunately, just having a copy of the census report doesn't do the whole job for the teacher of vocational agriculture. The completed report will probably contain nearly 300 pages of statistical information. The problem, then, becomes one of selecting that material which will be of maximum value to planning the local programs.

### Statistics for Counties

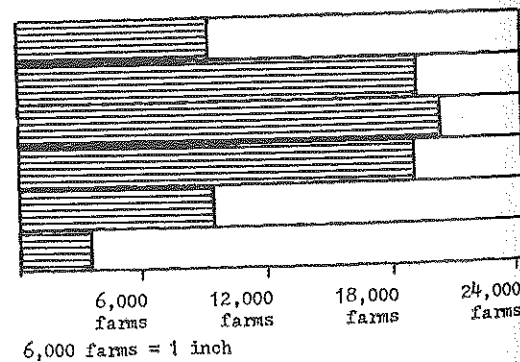
The 1964 Census of Agriculture offers Agricultural leaders valuable assistance for assessing trends, diagnosing problems, and subsequently designing programs which will best meet the needs of individual, county or community situations. One of the most useful sections of the Census of Agriculture in each of the state reports is entitled "Statistics For Counties." These statistics provide two types of information; first, is that data which identifies the present county agricultural situation. Such basic information as the number of farms in the county, the acreage devoted to major crops; the levels of farm income are examples of this type of information. The second type of information is that which indicates trends in the county's agriculture. Ten to twenty year comparisons of numbers of farms, numbers of dairy cows, or acres of wheat are all examples of trends in farming which help in predicting what may happen in the future. Such trends can be established by securing selected information from precious census reports.

WHAT ARE THE RANGES IN FARM INCOME FROM SALES OF FARM PRODUCTS ON COMMERCIAL FARMS IN OHIO?

1. Range in Income	Number of Farms		
	1954	1959	1964
\$50 to \$2499	11,440	7,721	9,016
\$2500 to \$4999	30,620	25,582	18,902
\$5000 to \$9999	39,851	26,774	20,302
\$10,000 to \$19,999	33,392	17,672	18,043
\$20,000 to \$39,999	12,158	5,612	9,040
\$40,000 or more	1,782	1,729	3,113

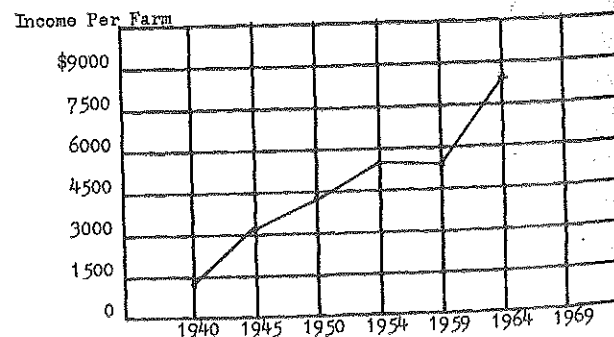
### 2. Ranges in Farm Income in 1964

\$50 to \$2499
\$2500 to \$4999
\$5000 to \$9999
\$10,000 to \$19,999
\$20,000 to \$39,999
\$40,000 and over



### 3. Trends in Farm Income

Year	Selected Trends	
	Income Per Acre	Income Per Farm
1940	\$15.18	\$1,422
1945	32.97	3,097
1950	43.71	4,346
1954	52.14	5,484
1959	48.00	5,397
1964	57.47	8,411



### Special Publication

Recognizing the importance of the Census of Agriculture to teachers of vocational agriculture, a committee made up of representatives of agricultural educators from Iowa, Missouri, Wisconsin, and Ohio made plans in 1961 for a model publication, which several states now use in preparing Census of Agriculture information for their teachers.

Ohio's Census publication titled "Facts on Farming" first appeared in 1956 and was followed by later editions in 1961 and 1966. The 1966 edition was distributed to Ohio teachers in September, this year. This 29-page publication, based on the regional committee's recommendations, helps teachers to use that information which can help keep them abreast of fast moving changes in agriculture.

The publication presents data to answer fourteen major questions regarding the agriculture of a county which are as follows:

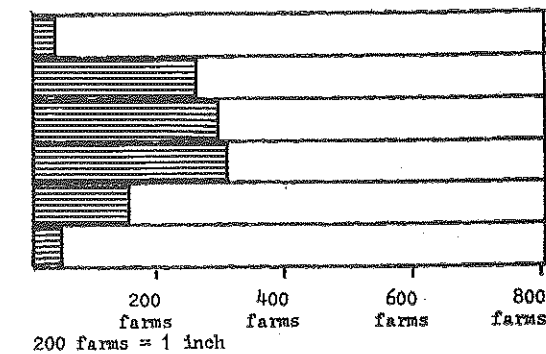
1. How important is the agricultural industry?
2. How many farms of various sizes are there?
3. What are the types of farms?
4. How is farm land utilized?
5. What are the major sources of income from farming?
6. What are the major farm expenditures?
7. What are the ranges in farm income from sales of farm products?
8. Non-farm income is received by farm-operator households.
9. What are the major characteristics of farm operators?
10. How much livestock is kept on farms?
11. What are the leading crops in acreage harvested?
12. What changes are occurring in horticultural production?
13. To what extent are farms mechanized?
14. What use was made of agricultural chemicals on farms?

WHAT ARE THE RANGES IN FARM INCOME FROM SALES OF FARM PRODUCTS ON COMMERCIAL FARMS FOR CRAWFORD COUNTY?

1. Range in Income	Number of Farms		
	1954	1959	1964
\$50 to \$2499	315	25	39
\$2500 to \$4999	400	340	249
\$5000 to \$9999	470	385	291
\$10,000 to \$19,999	200	250	300
\$20,000 to \$39,999	143	76	146
\$40,000 or more	N.A.	7	44

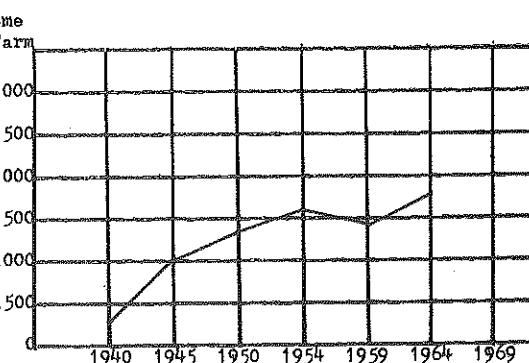
### 2. Ranges in Farm Income in 1964

\$50 to \$2499
\$2500 to \$4999
\$5000 to \$9999
\$10,000 to \$19,999
\$20,000 to \$39,999
\$40,000 and over



### 3. Trends in Farm Income

Year	Selected Trends		Income Per Farm
	Income Per Acre	Income Per Farm	
1940	\$16.95	\$1,798	12,500
1945	43.03	5,036	10,000
1950	52.09	6,626	7,500
1954	62.48	7,813	5,000
1959	55.00	7,311	2,500
1964	58.00*	8,827*	0



\*1964 Ohio Farm Income, Department Series A.E. 388, 1965. Ohio Agricultural Research and Development Center, Wooster, Ohio.

Most teachers have found this publication to be a useful source of information for teaching, for planning local programs, for use with advisory committees and for news articles discussing the need for changes and adjustments in local programs.

Two sample pages from the 1966 publication are shown here. Since the information for Crawford County faces a page of similar information for the state of Ohio, comparisons are facilitated.

### Summary

Effective local programs of agricultural education involve long-time planning, community understanding and support. Vocational agriculture teachers need up-to-date detailed knowledge of changes which are occurring in agriculture if they are to provide leadership in developing dynamic programs in agricultural education. If properly used, the Census of Agriculture can provide us with just this kind of information.



2-68  
 Herbert Bruce, Jr.  
 Teacher Trainer Ag. Ed.  
 College of Education  
 University of Kentucky  
 Lexington, Kentucky 40506

Stories  
 in  
 Pictures

Gilbert & Guiler  
 Ohio State University

Vocational Agriculture instructor Don Elson of Kansas discussing wheat fertilizer demonstrations to high school students. The glass front boxes allow students to also observe root development of plant.

THE AGRICULTURAL EDUCATION MAGAZINE, February, 1967



In the study of off-farm occupations, the Appling County, Georgia vocational agriculture department constructed a greenhouse for laboratory use in their classes of ornamental horticulture. Photo—Bryant.

# Agricultural . . . . . . Education

Volume 39

March, 1967

Number 9



James H. McKee, teacher of vocational agriculture at the Franklin, Tennessee High School explains the operation of a motor to two of his students. They are from left: Roger Hassel and Charles Patton.

Featuring—

Agricultural Mechanics