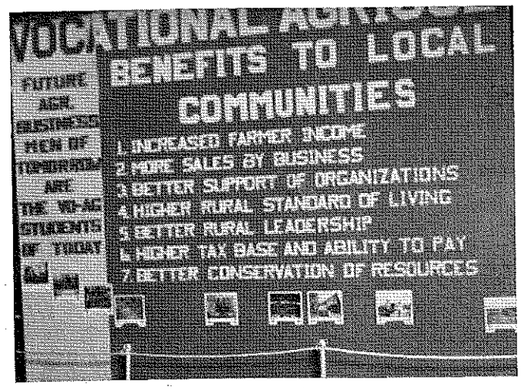
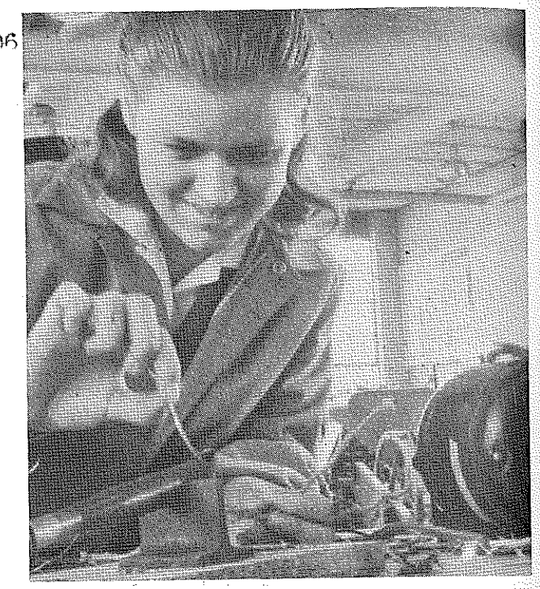
Stories in Pictures

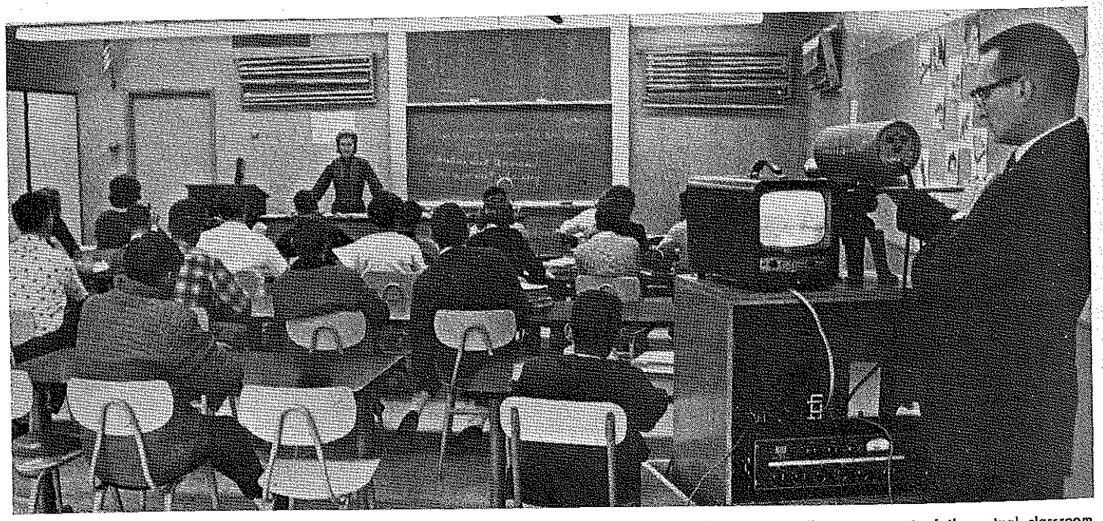
GILBERT S. GUILER
Ohio State University



Dodge County, Wisconsin, Educational Booth calls attention to how Vocational Agriculture in the changing role benefits the local communities. Photo—Nicholson



Girls have played an important part in the changing role of Vocational Agriculture in Connecticut. Here a student solders an electrical splice in the Agriculture Mechanics Shop.



Portable TV taping for teacher training in Agricultural Education may become a popular practice. By recording a segment of the actual classroom teaching done by an intern can provide instantaneous playback for immediate critique as demonstrated in California.

Agricultural . . .
. . . Education

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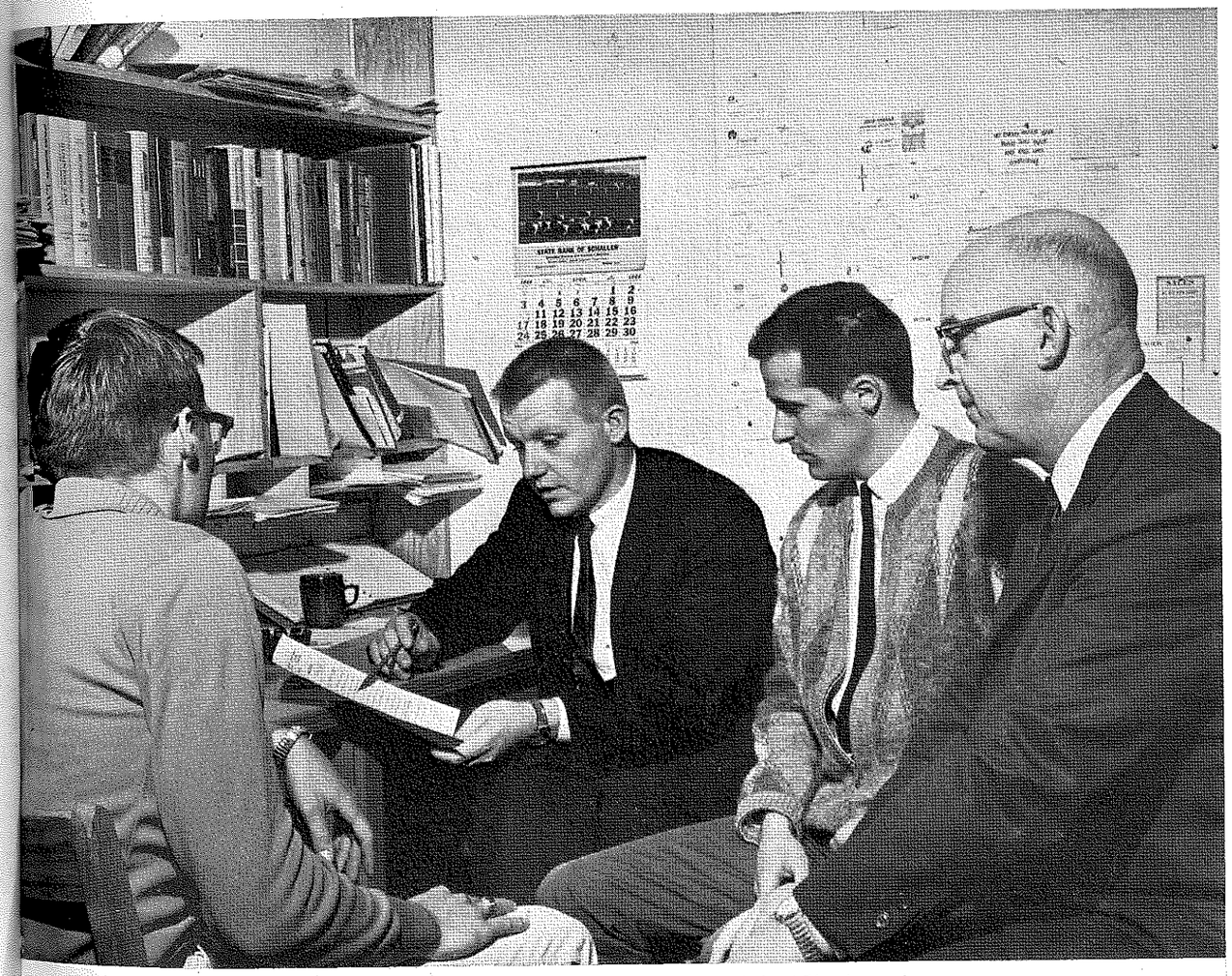

Student Teachers Doug Campbell and Dennis Workman in Agricultural Education receiving instruction and counseling at Muscatine Community College, Iowa.—Photo by Dalbey.

Featuring COLLEGE PROGRAMS FOR PROSPECTIVE TEACHERS

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Editorials

What Sort of Program for What Sort of Teacher?

The title of the editorial asks a double-barreled question. This is the major problem facing anyone giving serious thought to the question of college programs for prospective teachers of vocational agriculture. Let's begin with the second barrel of the question, which is where we should begin, according to my philosophy. That is, much time can be and has been wasted in discussing college programs without relating to the type of graduate hoped for. In fact, for those of us who have spent years in study of teacher education, it is amazing to see how quickly many people can tell you what sort of college program you ought to have.

Everyone will not agree on the sort of teacher of vocational agriculture that should be produced by the colleges, even if they could be mass produced like automobiles. (The automobile might not be a bad analogy here, as we have seen the manufacturers of a given automobile move from two or three choices within a given model to dozens of different choices trying to hit every size pocket book and most tastes.) Perhaps most would agree that we need a teacher who will meet the needs of the years ahead rather than the past or even the present. Even in this agreement though, we would need to limit the future to the immediate years ahead, as far as preparation through the undergraduate program. Further needs must be met through in-service programs.

Although there are more limits to the Job Analysis approach than we sometimes give, this is one necessary step in "seeing" the sort of teacher needed in the future. What will be his environment for teaching? What will be the expectations? How will these differ from the past and the present? As a number of articles in this magazine during recent months have pointed out, for the first time to any great extent teachers are being expected to teach in areas in which their own experiences are limited or missing completely. Thus, we can safely assume that a job analysis will reveal that the young teacher **cannot** be experienced in all areas of expectations in his first teaching job. The student, as well as all concerned with teacher education, should develop a full realization of this fact before he becomes a teacher.

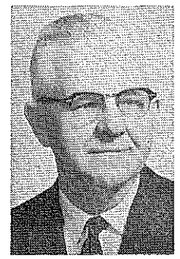
The college program for prospective teachers of vocational agriculture must be concerned with helping those enrolled to develop competences for a beginning teacher. Forget about the "Ideal Teacher"; that can come later if he wishes to pursue this elusive idea. Also, dismiss the idea that the graduates of the teacher education program will have anywhere near the same competencies; they will differ greatly, even if they have the same level of ability and follow the same curriculum with about the same degree of scholarly attainment. I am suggesting that we forget the idea of a specific job of teaching vocational agriculture to be done in a specified way by all graduates of a stabilized curriculum. In other words the problem is not simply one of analyzing a job and turning out a graduate to fit. There are many definitions and concepts of teacher education. Here is one that indicates the type of program that I am advocating:

> A program of teacher education should aim to produce high-quality teachers. At the best level of quality, a teacher is a knowledgeable, educated person with highly developed personal arts of teaching, with intense commitment to personal and professional improvement, and with a deep love for mankind.—Willard B. Spalding.

This calls for a professional—**A REAL PRO.** It is my belief that most of us underestimate the value of the professional look needed by the teacher today and in the future. We seem much more concerned about the semester hours required in this or that area; or after beginning teaching if he has paid his dues. Both are needed, of course, but may not be the key factors. What is the mark of a professional? Here is Professor Dale Yoder, Stanford University, on the subject:

> One distinctive mark of the professional is his knowledge of theory as well as practice. . . . The pro knows the *why's* as well as the *what's*. Another distinctive characteristic is his continuing personal growth and development, his persistent learning posture. A third is his clear understanding that his first and fundamental responsibility is to the public—the community, the nation, and all citizens.

(Continued, page 124)



Cayce Scarborough

Theory and Practice

Notice the first appearance of Dr. Dega (AgEd spelled backwards) this month. It seemed appropriate to have him in this issue as we feature College Programs for Prospective Teachers. We hope that Dr. Dega will answer your questions from time to time.

Members of the Editing-Managing Board of this magazine serve with little recognition and appreciation. Much of the progress of the magazine depends upon the Board, especially the chairman. Orville Thompson, University of California, Davis, is serving ably as Chairman. Write him your ideas on making a better professional magazine.

A national magazine said that its editorial "accent is on relevance rather than retreat . . . involvement rather than indifference . . . concern rather than conformity." Wish I had said that!

SOS. Gilbert Guiler, Picture Editor, needs your help in getting good, sharp pictures of all areas of programs in agricultural education. Good FFA pictures are welcome, but pictures of other phases of vocational agriculture are in short supply. Don't wait until you have time to write that long article to go with the picture, just jot down a few pertinent facts to explain the picture and send to Gil at Ohio State.

You can add a new (at least to me) training program available in Agricultural Occupations. A two-year certificate course in *Agricultural Aviation* is available by the University of Nevada. The College of Agriculture, in cooperation with Ag Aviation Academy, Minden, Nevada developed the program for future Ag Pilots. Included will be all phases of ground training and flight training in helicopters as well as planes.

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Theory and Practice

(Continued from page 123)

Do teachers work as long hours as they think? One teacher responded as follows to an appeal for more recruiting efforts: "Students with ideas of teachng prefer other subjects that require shorter work days. They have little desire to follow the work schedule of an ag teacher."

Studies have been made in trying to learn why people enter and leave or do not enter the profession at all. See two reports in this issue. Maybe attitude enters heavily into the question of long hours on the job. It would be my guess that total hours on the job would not be related significantly to program effectiveness—unless inversely! Agree?

A sheet sent from a State Office was entitled "Vocational Agriculture Dates and Activities to Remember" for a given month. There were a total of 25 items listed for the teachers to consider, 21 of which were FFA activities.

"Cattle definitely like a midnight snack," says Dr. Paul A. Putnam, USDA beef cattle nutritionist. So, lights at night to encourage the animals to eat have shown promising results. Interestingly enough, some of the trials revealed gains although no more total feed was consumed. Apparently, spreading the feeding more evenly over the 24-hour day improved feed efficiency. Might be worth checking with your beef cattle experts at your agricultural college.

A more pessimistic note is sounded by some agriculturists concerned about the world food problem. This is especially true of those who believe that the world population is increasing more rapidly than the food supply. A Washington State University Professor of Agronomy, Dr. A. G. Law, is quoted as saying, "the barren moon will provide a more tolerable climate for man than planet Earth by 2000 if present trends continue." Why, that's just around the corner the way time is flying!

Question of the month: "Why is subscription to the *AgEd Magazine* usually the first item dropped from the package of dues, when it seems necessary to drop something?" The answer is needed in planning ahead for our professional magazine.

Thanks for your articles and letters. See you next month. MERRY CHRISTMAS.

Cayce Scarborough

GUEST EDITORIAL—

If You Have Something Worthwhile, Write About It; If You Don't, Do Something About It

ROBERT ENGELHARDT, Vo Ag Teacher,
Jac-Cen-Del High School, Osgood, Indiana

In the May 1966 issue of **Agricultural Education Magazine** an article by Ralph Woodin of Ohio State University "bugged" me. The article was about teachers writing more articles for publication in our professional magazine. As I read the many possible reasons for this apparent laxity and its remedies I came to a conclusion which is an indictment of most of us teachers throughout the country.

In my eleven years as Vocational Agriculture teacher in the same school community, I have attended **many** meetings, conferences and workshops. Through this process we meet with a multitude of colleagues who have similar backgrounds and problems to the point that we are almost one in attitude and action. The main topic is "gripe" or "complain."

Perhaps the main reason professional articles are written more by people on the state level, teacher educators, supervisors and State Association Leaders is because they are more professional than we teachers on the high school level. This is my indictment. We become lax, professionally lazy, and content in our self-satisfaction rut and go on griping about our problems of not being accepted, our programs being challenged, etc., rather than being professional people. I would hate to go to a doctor that was as unsure of himself as we are at times. We should be proud of what we are doing and realize the importance of our position of direct contact men with the youth as well as the adults in our communities. That is, if we are doing something of which we can be proud.

Could it be that we have gotten so satisfied or lazy that we have nothing of which we can be proud? I have yet to meet a man who was doing his job well that wasn't proud and brimming over with an enthusiasm that was contagious—have you I have yet to see a proud man that didn't want to tell me about his endeavors—have you? Do you fail to write and spread the news because you aren't doing enough of which to be proud and want to share?

I am sick and tired of hearing different ways by which to convince our school boards, administrators and community that Vocational Agriculture is still a very important part of the school system. If the right man, with the right attitude about his chosen field has the job of teaching Vocational Agriculture in a given school—he will not have to defend it or sell it—he will be so busy doing things in which he believes that it will be sold on its own merits.

Do you have to sell your program? Are you proud of your position of Vocational Agriculture teacher? Maybe you need to "get on the ball"; then your time will be full of sharing and not griping. If you have something worthwhile, **write about it;** if not - **DO SOMETHING ABOUT IT.**

What Sort of Program for What Sort of Teacher?

(Continued from page 123)

When we try to take a long look at the needs of a teacher education program for developing **REAL PROS** as teachers of vocational agriculture, and take a close look at the programs now in operation, we must question whether the two have much in common. In fact, I believe that we need to test the hypothesis that present-day programs in teacher education are **not** designed to meet the demands of a beginning teacher of vocational agriculture in today's modern schools.

Cayce Scarborough

Walter Bjoraker

Teacher Internship-- A Needed Approach in Teacher Education

John Thompson

JOHN F. THOMPSON and WALTER T. BJORAKER,
Teacher Education, University of Wisconsin

When the full-time resident student teacher program began in the 30's, agricultural education was one of its founders and developers. This pattern served as the model for teacher preparation for about thirty years. Today, there is a revolution underway in the preparation of teachers. A new pattern of teacher preparation; namely, the teacher internship, is coming forth in many areas of education. As this new idea emerges, vocational education finds itself on the trailing rather than the leading edge.

Student teaching programs began as there existed an awareness of the gap between what the aspiring teacher can learn in his college classes and the situation he will confront as a teacher in a classroom. Educators, such as Conant, refer to practice teaching as the one "indisputable essential element" in the teacher education program. A statement such as this is a simple recognition that there exists a relationship between theory on the one hand and practice on the other. Theory and practice complement each other and do not stand alone. The theory learned in a college classroom is practiced, is shaped, is refined and improved during the student teaching experience.

It was recognized at an early date that resident student teaching was a far superior teacher preparation technique than was an isolated visit to a classroom, or repeated short visits to a University laboratory school. However, time began to show even the artificialities of the student teaching experience. About 1960 educators began to look for ways of providing a more educationally sound teacher preparation technique. The idea of an internship in education arose from these considerations.

Internship

The internship proposes to present a more balanced and better prepared beginning teacher. Under this emerging pattern, the prospective teacher devotes less of his undergraduate time to courses on how to teach, and considerably more time to learning the academic subject that he is preparing to teach. His graduate work concentrates on the underlying disciplines of teaching—psychology, sociology, philosophy, history. The internship following this preparation provides the capstone to his professional program.

Basically, we can define an internship as "an extended; adequately supervised; full-time teaching experience which follows an organized program of formal preparation in academic subject matter, supporting disciplines, and education; and which precedes certification." It differs from an apprenticeship in that it pre-supposes that the intern has acquired many of the specialized skills and much of the knowledge believed fundamental to actual practice in education.

The internship in agricultural education at the University of Wisconsin is well underway. Our first interns were placed in the fall of 1966. It is primarily a post graduate teacher preparation program offering an opportunity for persons with a non-education bachelor's degree in agriculture to (1) become certified as a teacher of vocational agriculture, or (2) earn a master's degree and certification. The program is quite flexible and may be planned also to accommodate persons without a bachelor's degree.

Most master's degree candidates can normally plan to complete the program in two summer sessions and an intervening academic year. Those seeking a bachelor's degree may naturally take longer. A schedule of courses for a suggested master's program at the University of Wisconsin is presented in Table 1.

One complete semester (18 weeks) is spent in a school system as a bonafide faculty member of an outstanding school system. The intern is on contract and is paid a salary ($1,200) for the semester

(Continued, page 126)

TABLE 1. SUGGESTED MASTER'S PROGRAM FOR A TEACHER INTERN

Suggested Course of Study	Credits Undergraduate	Graduate
Special problems, individual reading and research		8
Wis. Statutory requirements (conservation and cooperatives)		6
Agricultural education methods		3
Student internship	8	
Psychology, adult learning		6
Free elective		3
Total credits	8	26

Walter Bjoraker and John Thompson

(Continued from page 125)

by that school system. He has the total responsibility for two to four classes. A team approach to teaching is stressed whereby the master teacher can supervise the development of the intern. During the semester the intern is involved in seminars taught by University staff. From a non-resident intern's financial point of view, the scholarship for remission of fees that all non-residents in the program receive is worth nearly $1,500 in addition to the $1,200 salary earned during the one semester in the public school system.

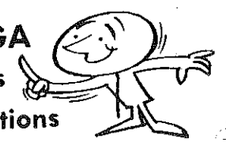
Results at Wisconsin

At Wisconsin, the program is presently appealing to mature individuals who have come to realize they would like to become teachers. They have had a period of successful occupational experience following their B.S. degree and now desire entry into the teaching profession. The intern program, embodying the philosophy that certification of teachers should be on the basis of ability rather than on completion of specific courses, provides an effective avenue of entry and will provide the profession with additional highly qualified teachers of agriculture.

In addition to its superiority as a program of teacher preparation and its advantages to the individual, there is one more advantage that needs to be cited. Many of our schools possess too many students for one agriculture teacher but may not be sufficiently large to support two teachers of agriculture. Since a school system is scheduled to receive interns for two consecutive semesters, this method of teacher preparation provides an opportunity to strengthen some of our overloaded departments.

In summary, then, the main theme of this article has been that there is emerging an internship pattern of teacher preparation and vocational education in agriculture is beginning to employ this technique in the preparation of its teachers. It holds great promise and is regarded by some as the model of teacher preparation which will replace resident student teaching. The teacher intern program presents to the profession a beginning teacher who knows thoroughly the subject that he is to teach, has an understanding of the disciplines which support teaching, and who has had a full-time pre-service teaching experience.

DR DEGA Answers Your Questions



Dear Dr. Dega,

As you know, this is my first year teaching vocational agriculture. I am confused.

When I was in your classes at college you said that a teacher of vocational agriculture should always cooperate with his school administrators. Here is the problem: My principal, superintendent, and supervisor have different ideas about how I should spend my time and what I ought to emphasize in my program. How do I solve this problem?

I hope that all goes well with you and the AgEd boys at the university. Come to see me when you can.

Sincerely,
I. B. New

Dear I. B.,

Glad to hear from you and to know that you are making a good start as a teacher of vocational agriculture. I am not sure that you can really "solve" the problem mentioned. However, I am glad to comment on this for whatever it may be worth.

The fact that you are aware of the expectations that people hold is a good sign. I think that this is more important than that there is lack of agreement. In fact, I expect if you check with a few more people, some farmers for example, that you will find still different expectations. These expectations may differ so widely until you will not be able to fulfill all of them. So, where do you start?

Try to learn what others closely involved with vocational agriculture expect of you. You may recall from your sociology that these are called "relevant others," and the teacher of vocational agriculture will likely have several of these. Then take a close look at the major purposes of the program in vocational agriculture and how you spend your time in developing this program. How does this jibe with the expectations?

Something will probably have to give. Priorities must be assigned to parts of the program as well as your time. Watch that time element. Try to judge your work by results rather than hours put in, and save some time for that fine young family.

Your invitation to visit you is appreciated. I will schedule a day with you within the next few weeks. In the meantime, I will be glad to hear from you

Sincerely,
I. M. Dega

One of the First Vo-Ag Teachers Dies

Arthur C. Kennedy, 77, a retired Professor in the Department of Agricultural Engineering at The Ohio State University, died in Orlando, Florida. Professor Kennedy has been living in Windemere, Florida, since he retired in 1954 after serving 17 years as a specialist in teaching farm mechanics. In 1949 he published the book "Farm Shop Plans for Students Notebook."

Previous to his college association he taught high school science at Medina, Ohio, and in 1918 was one of the first 19 teachers of vocational agriculture in the state. In 1920 he became a Cooperating Teacher at Worthington High School and in that capacity served as a non-resident staff member of the Department of Agricultural Education. Later he held the same position at the Reynoldsburg school.

He leaves his wife and two sons.

—Ralph E. Bender

Total Land in Farms About Same, Number of Farms Declining More Slowly

Although total land in farms—including idle land as well as that actually cropped or grazed—has declined only slightly in recent years, the number of farms has been declining steadily and average farm size has been rising.

An overall decline of a little less than 3 per cent from 1964 brought the number of farms in operation during 1965 down to 3.4 million. The number of farms remained unchanged in only three states.

However, the national rate of decline in farm numbers has been easing off. The loss between 1959 and 1960 was 3.6 per cent, but numbers may fall less than 2.8 per cent between 1965 and 1966.

With the number of farms dropping faster than total acreage in farms, the average farm operator in 1966 manages a farm unit of 350 acres—a fifth more than seven years earlier.

—*The Agricultural Outlook*, Feb. 1966

Teacher and Students Together in Agri-Business Classes

ROBERT MARRISON, Agricultural Education, Ohio State University

Account of student teaching experience illustrates value of planning and working together, as well as competences needed by teachers in off-farm agricultural occupations (OFAO)

The increasing number of non-farm students in the program of vocational agriculture has created the need for student teachers to receive special training in working with these students.

It was while student teaching in Lancaster, Ohio, that I realized the importance of the off-farm agricultural occupational (OFAO) program offered to vocational agriculture students.

Many Career Opportunities In OFAO

A study by Dr. Herbert D. Brum, Assistant Supervisor, Ohio Vocational Agriculture, made in 1965 shows that 5.3 percent of all people in Ohio's labor force employed off the farm must have skills and abilities in agriculture to carry our their jobs.[1] In Ohio, 15,000 people are needed each year to fill non-farm agriculture jobs in feed and fertilizer sales and service; farm and garden seed supply service; sales and service of agriculture chemicals; sales and services of agricultural supplies and equipment; grain marketing; petroleum sales and service in agriculture; and horticulture sales and production.

The decrease in the number of on-farm workers and the increase in the number of people needing training in off-farm agricultural occupations has caused the high school vocational agriculture program to be changed.

Ohio has 34 high school vocational horticulture departments with a total enrollment of 754 students, and has 2,000 students enrolled in agri-business occupational experience programs. Seventeen vocational departments have separate agri-business classes in conjunction with their regular agriculture classes.

Lancaster Situation Suggests OFAO Program

The OFAO program in Lancaster was started by the agriculture teacher, Don Waliser, in 1963 for agriculture students only. The program was expanded in 1965 to include horticulture students. I worked with the horticulture students.

Lancaster, a city of 35,000 is the county seat of Fairfield County. The agricultural county has an annual income of $15 million from agricultural products. Twenty-five percent of the income is from dairy, 22 percent from hogs, 22 percent from cattle, and 8 percent from corn. Even though the county is highly agriculturized, the opportunities for on-farm experience for Lancaster students are limited since the school district encompasses only a small area around Lancaster. The agri-businesses and industries in the community provided the basis for the OFAO program.

The Lancaster department has 55 students. Eleven are enrolled in horticulture and 29 in the work experience program.

The Lancaster program is open to students who want to make a career of agriculture or horticulture, but who don't have the facilities at home for a regular farming program. The student signs up for his regular high school classes, including agriculture and horticulture. In addition, he goes to work for an agricultural business in the Lancaster area. He works after school, or weekends, and during the summers.

Student Teaching Experiences in OFAO

One of my major jobs as a student teacher was to help the agriculture teacher recruit businesses and firms who would hire students. It wasn't always easy to convince an employer to hire a student. What about the child labor laws? Would any union object to a student working side by side with an old-timer on the job? Did the student have a driver's license so he could drive the company delivery truck? Once these and many other questions were answered, most employers were happy to have the chance to participate in the program.

Agricultural businesses and firms participating in the Lancaster program include grain elevators, dairy processing plants, farm machinery dealers, and veterinarian clinics. The Lancaster High School doesn't have a greenhouse or a land laboratory. Horticulture students went to work in greenhouses, nurserys, or florists shops in the community.

Another important part of my job was classroom teaching. I helped the students prepare for interviews with prospective employers and worked with them on how to keep records and receipts of their work experiences. A good personal appearance and a good working relationship with the boss were stressed. All this was in addition to the regular agriculture and horticulture classroom work.

Student Teaching in Vocational Horticulture

For horticulture students, classroom work included teaching and developing skills and competencies in greenhouse management and operation, ornamental and nursery stock production, landscaping and turf management, production of greenhouse vegetables, floriculture, fruit production, and vegetable production. Agri-business students were taught agricultural salesmanship, organization and operation of agricultural businesses and business management and principles.

As an advisor to eight students I had to keep pretty much on top of how they were doing on their jobs, as well as in the classroom. Periodic visits with the employers to evaluate the progress of the students were part of my busy schedule.

Every six weeks the employer evaluated and graded the student's performance and progress on the job. This grade became part of the students overall six weeks grade in vocational agriculture or horticulture.

To Sum It All Up

The records of the Lancaster program proved to me that students do learn on the job as well as in the classroom. The non-farm students that I worked with quickly advanced on the job. One student in the program received the 1965 Ohio Future Farmers Association's agri-business award as the outstanding boy in the Ohio OFAO program. Two other students won a gold rating on their horticulture demonstration at the Ohio State Fair.

I learned from the students. The teaching experience gave me the opportunity to develop competencies in teaching agriculture and horticulture. I feel the experiences I received while working with the Lancaster OFAO program will be valuable to me when I become a full time agriculture teacher after I graduate from O.S.U.

[1] Herbert D. Brum, *The Extent and Nature of Opportunities for Non-Farm Agricultural Occupation in Ohio*, 1965.

Thomas Hoerner

Occupational Choice and Tenure of Ag Ed Grads

THOMAS A. HOERNER, Assistant Professor
Agricultural Education Department and
The Pennsylvania State University
University Park, Pennsylvania

CLARENCE E. BUNDY, Professor
Agricultural Education Department
Iowa State University, Ames, Iowa

Clarence Bundy

The agricultural education graduate may teach vocational agriculture or may be employed in many different occupations after graduation from college. A recent study related to the occupational choices of agricultural education graduates from Iowa State University proved this to be a very valid statement. The study included 1022 men who were graduated from January 1, 1940 to July 1, 1964. Data were obtained from the graduate's permanent college record and from an eight-page questionnaire mailed to each graduate. Information requested in the questionnaire pertained to the graduate's home background, high school and college record, and first and 1964 employment information. The primary objective of the study was to determine the factors that influenced the employment tenure of men who qualified to teach high school vocational agriculture.

Eighteen occupational areas not including military service and graduate school were selected for the study. The graduates were asked to check the employment area which best described their first and 1964 occupations. A number of graduates, however, checked "other category" for both first employment (4.8 percent) and 1964 employment (13.5 percent). The other occupational category included ministers, veterinarians, airline pilots, farm managers, lawyers, realtors, cooperative managers, elementary teachers, and numerous other occupations.

Data in Table 1 reveal tenure of graduates when 1964 employment area was vocational agriculture teaching. The mean years taught ranged from 16.3 years for the 1940-45 graduating group to 2.4 years for the graduates during the 1960-64 period. Mean tenure in years for all graduates who were teaching in 1964 was 7.0 years. There were 186 graduates (18.2 percent) teaching in 1963, ranging from 43.0 percent of the 1960-64 graduates to 10.2 percent of the 1950-55 group who were teaching.

In respect to the number of graduates who had entered teaching, it was found that 570 graduates (55.8 percent) actually entered the profession at time of graduation. The percentage who entered in any one 5-year period ranged from a high of 69.3 percent for the 1940-45 graduates to a low of 52 percent for the 1955-60 graduating group.

Of the 1,022 total graduates, 654 (64.0 percent) had actually taught vocational agriculture sometime since graduation. As with the percentage who entered teaching after graduation, the percentage who have taught was also found to be the highest for the 1940-45 graduates. A slight but downward trend was apparent over the 25-year period.

Table 1. Tenure of graduates when 1964 employment area was vocational agriculture teaching as related to year of graduation.

Factors related to tenure	Period of graduation					Total
	1940-45	1945-50	1950-55	1955-60	1960-64	
Means years taught	16.3	14.1	9.1	5.4	2.4	7.0
Number Teaching vocational agriculture in 1964	12	24	30	65	55	186
Percentage of graduates teaching vocational agriculture in 1964	13.6	15.3	10.2	18.4	43.0	18.2
Number entering vocational agriculture teaching	61	101	154	184	70	570
Percentage of graduates who had entered vocational agriculture teaching	69.3	64.3	52.2	52.0	54.7	55.8
Number who have taught vocational agriculture	64	113	189	212	76	654
Percentage of graduates who have taught vocational agriculture	72.7	72.0	64.1	59.9	59.4	64.0
Total	88	157	295	354	128	1022

The percentage who taught, but who did not enter the profession immediately after graduation, ranged from 3.4 percent of the graduates during the 1940-45 period to 11.9 percent for the 1950-55 period.

First Employment

Data were also collected relating to the graduate's first employment income and employment area. Five hundred and seventy graduates (55.8 percent) reported vocational agriculture instructor as their first employment area. The next largest group was the group that entered the G. I. on-farm training program. This program was prevalent during the 1945 to 1960 period. Other employment areas that the graduates entered were: extension service, 5.9 percent; farming, 5.5 percent; high school teacher other than vocational agriculture, 2.6 percent; feed and seed business, 2.6 percent; government work, 2.4 percent; and other, 4.8 percent.

Salary and Income

Data also revealed the mean incomes of the graduates stratified by employment area. Little difference existed in the mean first employment incomes of the four employment area groups which in each case had employed at least five percent of the graduates. Incomes over the 25-year period for these groups ranged from $4,524 for the vocational agriculture instructors to $4,061 for the G.I. on-farm training teachers. The group who entered college teaching (2.0 percent) had the highest mean income ($5,885) of all groups of graduates.

The vocational agriculture instructors were below the mean incomes of all graduates for the 1940-45 and 1945-50 periods, whereas during the three more recent 5-year periods their incomes were above the mean for the total sample. However, the vocational agriculture instructors' incomes, because they represented over one-half of the sample, had considerable influence on the mean income of the total group of graduates. Mean first employment incomes for vocational agriculture instructors ranged from a low of $2,218 for the graduates during the 1945-50 period to $5,908 for the 1960-64 group. Mean income for the 570 graduates who entered this field was $4,524 for the 25-year period. This mean was slightly higher than the $4,440 reported as the mean first employment income of all graduates over the 25 years.

Mean 1963 income and number of graduates classified by employment area are revealed by data in Table 2. As indicated, 186 graduates were teaching vocational agriculture in 1964. Employment areas accounting for at least five percent of the graduates included: farming, 10.4 percent; feed and seed business, 7.2 percent; extension service, 6.8 percent; high school teacher other than vocational agriculture, 6.7 percent; and government, 5.2 percent. College teaching and banking accounted for 96 of the graduates in 1964 with 4.6 and 4.8 percent, respectively employed in these two areas.

The 186 vocational agriculture instructors had a mean income of $7,000 in 1963. The graduates in only three other employment areas: farming, high school teaching other than vocational agriculture, and the petroleum business reported lower mean incomes for 1963.

Table 2. Mean 1963 income and number of graduates by employment area and year of graduation.

Employment area	Number of graduates and mean income by period of graduation						
	1940-45	1945-50	1950-55	1955-60	1960-64	Total	%
Voc. ag. instructor	12 $ 7,563	24 8,038	30 7,548	65 6,898	45 6,074	186 7,000	18.2
Farming	10 4,400	12 5,583	27 5,985	46 6,033	9 6,489	106 5,851	10.4
H. S. teacher other than voc. ag.	2 6,000	12 8,717	20 6,585	29 6,320	5 5,900	68 6,781	6.7
school administration	1 10,400	7 7,486	3 8,533	15 6,983	1 6,650	27 7,400	2.7
Extension service	7 11,171	17 8,476	17 8,156	21 5,746	5 6,520	69 7,675	6.8
Government	6 8,133	10 7,655	9 9,539	21 6,600	7 4,342	53 7,173	5.2
Fertilizer business	4 9,000	3 11,667	12 10,108	18 7,844	1 6,500	39 8,947	3.8
Feed and seed business	4 12,450	12 10,758	33 8,955	20 8,020	4 6,975	73 9,078	7.2
Radio or TV			2 8,750			2 8,750	.2
Livestock industry	1 13,000	3 9,167	9 8,355	6 7,066	3 6,800	22 8,113	2.2
College teaching	7 13,171	10 12,820	18 9,764	11 7,032	1 6,500	47 10,213	4.6
Sales, other than ag. products	5 12,560	7 8,843	13 10,377	6 10,083	1 8,800	32 10,278	3.1
Machinery business			2 12,300	3 6,900		5 9,060	.5
Petroleum business			1 5,700	2 6,050		3 5,933	.3
Banking	3 10,560	6 12,033	16 9,488	17 7,201	7 5,371	49 8,484	4.8
Insurance	1 11,000	4 10,750	9 11,588	4 10,550	2 5,200	20 10,545	2.0
Journalism			3 10,400	3 7,500		6 8,950	.6
Private business	9 13,822	2 18,600	13 7,783	7 7,371	2 5,750	33 9,875	3.2
Other	14 9,603	27 11,230	44 8,928	43 6,824	9 5,978	137 8,159	13.5
Military Service	0	0	8	10	7	25	2.4
Graduate School	0	1	4	6	4	15	1.5
Total Mean Income	86 10,005	157 9,445	293 8,625	353 6,902	128 6,023	1,017 8,002	

The lowest income group of the 1,017 graduates was the group employed in farming with a mean income of $5,851. The three highest income groups included: insurance, $10,545; sales, other than agricultural products, $10,278; and college teaching, $10,213.

The incomes of the 1960-64 graduates who were teaching vocational agriculture compared quite favorably with those of graduates in the other area; however, of the 1940-45 graduates there were only two employment groups, farming and high school teaching other than vocational agriculture, who reported lower incomes.

Other major findings were: (1) 89 percent of the graduates were farm-reared; (2) 59.3 percent of the parents of graduates were farm owner-operators or managers; (3) 53 percent of the graduates had completed 1 or more semesters of vocational agriculture, whereas 33.4 percent had completed 7 to 8 semesters in high school; (4) Family members were responsible for influencing 44.5 percent of the graduates' attendance at college and parents financed the college education for one-fourth of the graduates; (5) 43.3 percent of the graduates were aware of the

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Thomas Hoerner and Clarence Bundy

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vocational agriculture teaching profession prior to college enrollment; (6) Average tenure in vocational agriculture teaching was 3.0 years for all graduates, whereas the graduates who had entered teaching directly after graduation taught an average of 5.4 years; (7) The 186 graduates who were teaching in 1964 had taught an average of 7.0 years; (8) Years taught vocational agriculture when compared to membership in professional organizations produced a positive value significant at the one percent level; and (9) Years taught vocational agriculture when compared to advanced education status and curriculum enrollment at Iowa State University yielded positive coefficients of correlation.

Factors Influencing the Grad's Decision to Enter

The graduates were asked to rate 16 factors on a 1 to 5 point scale as having influence on their decision to enter their first and 1964 employment areas. The factors: (1) felt best trained, (2) working closely with people, (3) freedom and independence of the job, and (4) salary were rated as having the most influence on their entering the first employment area. Factors such as own my own home, evenings free, farming opportunity available, and close to parental home were rated as having little or no influence on their decision.

The factors having the greatest influence on the graduate's decision to enter the 1964 employment area were: (1) felt best trained, (2) freedom and independence of the job, (3) salary, (4) working closely with people, (5) opportunity for advancement and (6) security. Factors having the least influence for the 1964 employment area were close to parental home and farming opportunity available.

It was quite apparent that certain factors such as salary, opportunity for advancement and security had a greater influence on the graduate's decision to enter the 1964 employment area than on their decision to enter the first employment area.

Factors Influencing the Grad's Decision to Leave

The graduates who had taught and left teaching were asked to rate 24 items as to the influence on their decision to leave the profession. The graduates' scores on this part of the questionnaire were factor analyzed. As a result of the analysis the following five factors were selected as having the most influence on the graduate's decision to leave teaching:

1. Long hours and evening responsibilities
2. Salary and advancement opportunities
3. Community factors
4. Interpersonal problems
5. Failure to adjust to the teaching assignment

Community factors included, dislike community standards for teachers, size of community, and ethnic and religious factors. Interpersonal problems included, discipline problems, personality conflicts with the administration, failure to adjust to school schedule, poor rapport with other teachers and over emphasis of athletics. The items, dislike teaching certain areas of vocational agriculture, too few teaching aids, and little or no opportunity to specialize made up the factor, failure to adjust to the teaching assignment.

Conclusions

From the data obtained in this study it can be assumed that lack of advancement opportunities, salary, too many evening responsibilities and long hours are the individual or multiple factors that cause most men who enter teaching to leave the profession. In this group of 1,022 agricultural education graduates, these factors were most important in influencing 470 of the 654 graduates who had taught to leave the profession for which they were trained. Another evident problem is the fact that 368 graduates (36 percent) never did teach. A very serious problem is the fact that the 654 who taught only stayed in the profession slightly over an average of five years.

Coordinators of programs in distributive education in some states have limited themselves to a work load of 25 to 30 students. State Department officials may need to establish maximums for work loads of teachers of agriculture. The establishment of multiple-man departments appears to be one answer to the problem.

The work load of individual instructors may be reduced by providing in-service programs of instructional materials and consultant help. Vocational agriculture instructors, teacher educators, state supervisory staff members and local school administrators should coordinate efforts to develop a program which will result in a higher percentage of agricultural education majors entering the vocational agricultural teaching profession and a higher percentage of those who enter that remain in the profession for a long period of time.

Themes for the Agricultural Education Magazine

March-May, 1967

March—

AGRICULTURAL MECHANICS IN 1967

Is there still a place for "Farm Shop," with hand tools, woodwork, metal work, cedar chests, etc? How does the major purpose of the mechanics class of 1967 differ from the 1937 class? Is a special mechanics teacher necessary? Examples of specialized programs. Should mechanics be a part of each year of vocational agriculture? If so, should emphasis differ each year?

April—

RESEARCH EMPHASIS

Progress report on emphasis on research as result of 4(c) and other funds for research. Major areas of research done and in progress, as well as trends in type of research being done. Reports from the Centers for Research and Development. How have the pilot programs done? Stories of successes and problems. Most promising organizational patterns for research.

May—

THE FFA—FOR 1928 OR 1968?

Objectives of the FFA—then and now. How is the FFA being changed to meet the changing high school program? How does the Future Farmer organization meet needs of those not now nor planning to farm? Examples of modern programs for modern needs. Relationship to teaching program. Research in FFA. Reports from National Officers. Trends and outlook for FFA.

Instruction for Horticultural Occupations

DONALD COFFIN, Vo Ag Instructor, Guthrie, Oklahoma

A two-hour class in horticulture for vocational agriculture may be rare, yet today it has possibilities for needed training and favorably boosting the general public opinion toward vocational agriculture.

With our cities building rapidly, our population increasing swiftly, and the American trend to make things beautiful—the jobs in the production and distribution of horticultural products create a challenge to teachers and students alike.

This Is Farming Too

Why should horticulture not be taught to vocational agriculture students? Even the labor department classifies these plant producers as farmers.

For $10,000 one can start a farming operation! This will startle you, yet it's true. Ten thousand dollars will buy one acre of land, cover it with plastic and produce a profit of $8,500 for its owner-operator.

Leaf lettuce and hot house tomatoes are almost certain to be in demand within 100 miles of your home. Marketing the product is the one "must" before many people can be employed in any business.

The Program at Guthrie

Guthrie High School in Oklahoma is developing a horticultural program that might be of value to other high schools. The program has been set up with two classes of two hours each per day. Approximately one hour to be spent in theory and one hour in actual greenhouse work.

Plans for the program at Guthrie to continue at least three years have been made. The first year, two classes composed of freshman, sophomores, juniors, and seniors have been enrolled with the freshmen in a class by themselves. The reason for the division being that most businesses will not and cannot employ people under 16 years of age.

Both classes are spending most of their time learning the basic principles of plant propagation. From seed experiments on scarification to the effect of moisture, temperature and oxygen on germination have been tried. Many new words and terms used in the plant work are being learned.

Time is being spent on the identification of greenhouse plants and ornamental trees and shrubs. Mr. Odie M. Helton, Manager of Furrow and Company, Inc., the largest greenhouse operation in the Southwest, felt identification was important enough to give the school one of each type of plant that they grow to use for identification purposes. Mr. Helton said *"I have some men who have worked here three years and still cannot identify all our plants."* Being able to say to an employee—move the hydrangeas from the cooler to the forcing house and knowing that he is not going to move the azaleas saves much time.

Some Problems

One of the problems in beginning a completely new program is to find instructional material. The Horticulture Department, Oklahoma State University, has been most helpful and cooperative. The book *Plant Propagation, Principles and Practices* by Hartmann and Kester has been used as a text and covers the fundamental principles involved in plant propagation and serves as a manual that describes useful techniques for propagating plants. Another book *Commercial Flower Forcing* by Laurie, Kiplinger, and Nelson provides useful information on forcing flowers.

A good method of keeping up to date is to order catalogues from wholesale commercial sellers of horticultural products. George J. Ball Company of Chicago has excellent information available as do Yoder Brothers. Our students take a greater interest when they see and order their own supplies for their school greenhouse.

Propagating geranium cuttings for planting around school. Students are in the 20' x 20' glass greenhouse.

Students moving daffodils, hyacinths, and tulip bulbs. School greenhouse, in background, is made of fiber glass.

Aim of the Program

Our vocational agriculture instruction in horticulture should be aimed at producing students for the commercial world. These students will need to be trained with the idea that they will probably have to build their own greenhouses, grow their own plants and find their own market.

Facilities a Must

They cannot be trained, as they should be trained, with make-shift, outdated, inadequate equipment. School greenhouses need to be as modern as the commercial greenhouses. Times are changing so rapidly and plant research is finding so many new things that we must teach our students to continue to study. As an example—chrysanthemum growers have always thought they could overwater. Pennsylvaia has found that plants watered twice a day with 16-18 oz. of water with nutrient elements added, do much better than those treated the conventional method.

A school greenhouse is almost an essential requirement for teaching. At present our plans call for the growing of several types of crops this year.

1. A planting of chrysanthemums, 400 cuttings of four varieties, planted in September to flower the middle of December.
2. A crop of bulbs, tulips, daffodils and hyacinths, planted outdoors in the fall in pots under sand and sawdust and indoors for blooming at Valentines.
3. A crop of carnations for Mother's Day, planted in January and not pinched.
4. A crop of snapdragons set in bench in January for May flowering.
5. A crop of standard mums, 50 blooms per week for 6 weeks, the last to be used for school graduation.
6. A crop of bedding plants, mostly geraniums and begonias, for spring planting.

The Supervising Teacher

HAROLD BINKLEY, Teacher Education, University of Kentucky

There is a great gulf between the master teacher and the mediocre teacher. What makes the difference? To a marked degree, pre-service preparation. Attitude toward teaching and students; what knowledge or information is relatively most important to teach; what abilities; how to motivate and inspire students; to meet the individual needs of students; and to do an all-round good job of teaching are learned, to a marked degree, under the direction of a skillful supervising teacher. What the on-campus teacher educator *says* may have little meaning compared to what the prospective teacher is caused to *do* and *understand* as a student teacher under the direction of the supervising teacher. What the supervising teacher does and how he does it speak louder than any decision arrived at in a class on-campus. Thus, the job of a supervising teacher is a most responsible and significant one—perhaps the most important job in teacher education. Most supervising teachers are dedicated people, and many deserve the "Legion of Merit" America's highest peace-time decoration.

The Teachers of Tomorrow

Teachers of agriculture of tomorrow need to have a broad and thorough background in general education—to include English, humanities, communications, and social studies. They must be skilled in working with and "getting along with" people, and be well-rounded individuals if they are to prepare their students for agricultural vocations and for living in a complex society, and at the same time be happy and make their greatest contribution.

Agriculture teachers of the future must use modern techniques of educational leadership in developing and carrying out sound and up-to-date programs in their communities. They will need to be skilled in organizing and working with advisory groups. They will have to lead on a sound basis—use basic research techniques in determining needs and in planning programs for local communities.

The teacher of tomorrow must be skilled in teaching—directing and supervising the learning process. He must be educated to get a deep and abiding satisfaction from teaching, and he must have a sustained interest in teaching. How the beginning teacher feels about and the understanding he comes to have of the importance of these matters are largely determined by the supervising teacher.

Sound Programs of Vocational Agriculture

The first responsibility of a teacher of vocational agriculture is to teach—to teach agriculture. Teaching agriculture is not limited to farming, but includes much agriculture which is related to farming. Prospective teachers cannot learn to teach *vocational* agriculture unless their students have supervised work experience in the agriculture to be learned. Sound programs of vocational agriculture are based on the needs of students and the opportunities for quality supervised practice important for students of vocational agriculture to learn, and learn well, and how this is determined are exceedingly important learnings for the supervising teacher to secure in his teachers in training. Too often this matter is not made crystal clear to the student teachers.

Practice is essential to learning. Student teachers come to believe and understand this to the extent that the agriculture they teach their students is sound and these students have practice in the agriculture taught through supervised farming programs or other supervised occupational experience related to the class instruction. Student teachers will learn what they *do* or engage in however poor or excellent that may be. There must be quality in the supervised practice in agriculture if there is to be quality in the teaching of vocational agriculture and quality in the preparation of teachers.

A Philosophy of Teacher Preparation

What is relatively most important for the student teachers to learn to do and do well? They can't learn to do everything; time is too short. The supervising teacher has the important job of deciding what should be learned and learned well in order to succeed as a teacher.

Unpreparedness results in failure; failure, to a large extent, can be prevented through preparation. Unpreparedness for teaching a lesson results in failure or poor teaching. Unpreparedness

Harold Binkley

for a career of teaching—of teaching agriculture—results in failure or a poor performance as a teacher.

Success in teaching and as a teacher is based upon a habit of preparation. A habit of preparation for teaching and supervision is acquired, or fails to be acquired, under the direction of the supervising teacher. The supervising teacher who develops and causes his student teachers to develop a good lesson plan for each lesson to be taught will make a major contribution to forming the habit of preparation.

There is a preponderance of little jobs that take too much time. In the limited time available the supervising teacher must be highly selective in what he has the student teachers engage in and in what they teach the students and teach it well. Some of the significant things that supervising teachers should concentrate on are: giving demonstrations, using problem solving in teaching, developing supervised farming programs (or other agricultural programs), supervising programs of students, teaching and supervising young and adult farmers, developing and maintaining good facilities for teaching, keeping departmental records, keeping up-to-date and ample good references, building a good image of agriculture and vocational agriculture, being a leader in the school and the community, meeting the individual needs of students, and developing a spirit of optimism and enthusiasm for a good and thorough job of teaching vocational agriculture. It is the duty of the supervising teacher to get his student teachers to bring theory and practice together in their teaching and understand *why* this is exceedingly important.

"Where there is no vision the people perish." Where there is vision there is life, growth, and happiness. Prospective teachers get a large part of their vision and challenge from the program and the activities they engage in under the direction of the supervising teacher. The supervising teacher is on the "front line." A lot depends on his performance there.

Special Programs in Agricultural Occupations

The preparation of teachers of agriculture to organize and conduct special programs in agricultural occupations is largely dependent upon supervising teachers who have such programs in operation on a sound basis. The soundness of these programs is based upon the fundamentals—classroom instruction and supervised occupational experience in the agricultural occupation to be learned. The supervising teacher must select an area(s) of specialization in which occupational experience can be provided; determine the competencies needed for the occupation; and set up a course of study to develop these competencies. Successful work experience in agricultural supply business is a must if this type of training program is to have prestige, the image desired, and the support of the agricultural industry. Careful planning and direction of these programs is significant. Student teachers, through careful and deliberate involvement, can be caused to see the place of the special program, to understand its significance, and develop the "know how" necessary to conduct such a program, including the development of good work stations, arranging class and work schedules, and securing an understanding of the program by school people, parents, and people in agricultural businesses. For the most part, the attitude, the knowledge, and the ability to conduct a special program will be taught by a supervising teacher who has such a program.

Conferencing Student Teachers

If student teachers are to learn the most from each teaching experience (in the classrooms, agricultural mechanics shop, on the farm, or in an agricultural business) they must have pre- and after-conferences with the supervising teacher on their teaching activities. It is not enough for them to keep the boys busy and to visit with them, their parents, and others.

For each lesson to be taught in the classroom, each demonstration to be given, each supervisory visit to be made, and so on, the supervising teacher should make the assignment clear. The assignment should be made far enough ahead, with guidance, so that the student teacher can make good preparation—make a good lesson plan on paper. At least a day before the student teacher is to carry out an assigned responsibility, he should have a pre-conference with the supervising teacher at which time the two go over the plan very carefully and agree on any changes to be made in it. The final plan has the best thinking of the two.

As soon as possible after teaching, there should be an after-conference to determine the parts of the teaching procedure which were good and "why"; what parts were not good and "why"; and what would be a better way of handling certain situations or matters. Pre- and after-conferences for student teachers are fundamental in good teacher preparation. The supervising teacher sets the standards and the quality of these conferences. It is understood that as a student teacher develops, the conferences will grow shorter in length of time and of less detail.

Likewise, it is good teaching for the supervising teacher to hold pre- and after-conferences with his student teachers on many of the things he does which the student teachers observe. For example: teaching in the classroom, giving a demonstration, supervising a boy on his home farm, supervising a boy working in an agricultural-supply business, working with an advisory council, teaching an adult class, and meeting with a fair board or the board of education.

No Permanent Satisfaction In the Challenge

There is no permanent satisfaction in the job of a supervising teacher. It is said there is a restlessness in every artistic spirit that shall never know a permanent satisfaction in anything done. This applies to the artist supervising teacher. With each achievement in preparing teachers—each semester or year completed—something is realized that gives satisfaction, but with each there is a lurking discontent. At each step in achievement with his student teachers, the artist teacher feels a dissatisfaction creeping in, and so he tastes the bitterness that comes to all who seek the superlative. Such is the penalty of the creative life. Only the mediocre can rest upon their laurels, expecting their cup of triumph to remain full.

The job of a supervising teacher is a significant one. There is no place for a mediocre supervising teacher—too much is at stake.

Vocational Education Linked with Blue Collar Drudgery

"Many people, including parents as well as some school administrators, associate vocational education with blue collar drudgery," said Dr. James N. Freeman, Head, Department of Agriculture, Lincoln University, Jefferson City, Missouri.

Dr. Freeman was speaking to a state vocational association meeting in Louisiana. He pointed out that vocational education *IS* important for the individual and society. However, he warned that many people did not share this view. He illustrated this by citing a case where a group of parents marched to the local school board demanding that their children *NOT* be enrolled in vocational courses and programs. Again, it was suggested that the reason back of these requests was the feeling that vocational training led only to blue collar drudgery. Furthermore, that many vocational programs were considered as "dumping ground" for less desirable students. There may be enough truth to this to make it a valid point.

Dr. Freeman suggested that vocational programs are needed now more than ever before, but that they must be of high quality. He gave four characteristics of a good program in vocational education, as follows:

J. N. Freeman

1. It meets the training needs for qualifying the masses to enter the labor market in gainful occupations.
2. It provides appropriate depth and versatility in instruction.
3. It provides appropriate occupational experiences under satisfactory supervision.
4. It is based upon up-dated and pertinent objectives.

Dr. Freeman suggested that more forward-looking leadership in vocational education was needed, adding that some leaders today might fit the modern quip expressed as an equation that, "the number of blasts of auto horns is equal to the sum of the squares at the wheels."

Loren Froehlich

Why Qualified Vo Ag Teachers Don't Teach

LOREN H. FROEHLICH, Graduate Assistant, Iowa State University
CLARENCE E. BUNDY, Teacher Education, Iowa State University

Clarence E. Bundy

There is a critical shortage of good teachers in the United States today. Vocational Agriculture instructors are no exception to this rule. It is well-known that many agricultural education graduates do not enter vocational agriculture teaching or enter and leave the profession after having taught a very short time.

Why do these graduates decide not to enter or to leave the profession after a short time? An occupation made up of a large percentage of recent graduates is not slated to be long lasting. The need for replacement teachers is staggering in all areas of teaching and the reasons for the rapid turnover in vocational agriculture teaching should be understood and diminished.

This Study

Included in the study were 823 nonteaching agricultural education graduates (70.8 percent of all graduates) from the Iowa State University during the period January 1, 1940 to July 1, 1964. Mean tenure of these graduates in vocational agriculture teaching was 2.15 years. Three hundred and fifty-five (43.2 percent) of the graduates had never taught. Only 11.4 percent of the graduates taught more than five years.

It was our purpose to survey possible factors which may have had a tendency to influence agricultural education graduates to not enter or to enter and leave the vocational agriculture teaching profession, and to evaluate the reasons for leaving the vocational agriculture teaching profession as given by graduates who had left teaching.

Broad background variables included: family background, high school record, tenure in vocational agriculture teaching, first and 1964 employment of graduates, and factors influencing the graduate's decision to enter first and 1964 employment areas. Factors influencing the nonteaching graduates decision to enter their first employment area are summarized in Table 1. Twenty-four factors affecting the graduate's decision to leave vocational agriculture teaching after teaching five or more years are portrayed by data in Table 2.

Employment Areas

The employment areas which included at least five percent of the nonteaching graduates in 1964 were: farming, 13.3 percent; feed and seed business, 9.2 percent; extension service, 9.0 percent; high school teacher other than vocational agriculture, 8.2 percent; government, 6.6 percent; banking, 6.3 percent; and college teaching, 5.5 percent.

Table 1. Factors influencing the nonteaching graduate's decision to enter first employment area

Factors	Employment area[a] 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Factor mean
Salary	3.3	3.4	2.7	2.7	2.6	2.5	2.4	3.0	3.0	3.0	2.8	3.2	2.8	3.0	2.2	3.5	4.0	3.0	2.4	2.9
Working closely with people	3.5	3.2	3.2	1.8	3.9	3.8	3.3	3.1	5.0	2.4	3.0	3.8	2.1	2.5	2.7	4.5	5.0	2.9	3.3	3.3
Freedom and independence of the job	2.8	3.2	3.1	4.5	3.6	3.2	3.8	3.6	4.5	2.4	3.8	3.9	2.3	3.0	2.3	4.0	5.0	3.7	2.8	3.3
Security	2.6	2.2	2.6	3.4	2.7	3.2	2.4	2.5	3.0	2.9	1.8	3.4	3.0	3.0	3.1	2.2	2.0	2.4	2.6	2.7
Felt best trained in this area	4.2	3.6	3.0	3.9	3.7	2.9	3.0	2.6	4.0	2.4	3.7	2.9	3.7	2.0	2.1	2.2	1.0	2.8	2.8	3.0
Farming opportunity available	1.6	1.6	1.4	4.7	1.6	1.5	1.3	1.2	1.0	1.1	1.1	1.0	1.1	1.0	1.1	1.0	1.0	1.3	1.2	1.4
Good hours	1.8	2.3	2.4	1.8	1.8	2.3	1.9	2.0	1.0	1.5	1.6	2.2	1.6	3.0	2.6	2.5	1.0	1.7	1.8	1.9
Opportunity for advancement	2.3	2.1	2.5	3.1	3.1	3.3	3.7	3.8	4.0	3.8	3.3	4.5	2.8	3.5	4.0	4.2	4.0	4.2	3.0	3.4
Evenings free	1.4	1.4	2.0	2.2	1.5	2.3	1.8	2.2	1.0	2.0	1.2	2.0	1.6	3.0	2.6	1.8	1.0	2.4	1.6	1.8
Close to parents' home	1.6	1.9	1.8	2.7	1.5	1.3	1.0	1.5	1.0	1.9	1.0	1.1	1.3	1.0	1.0	1.5	1.0	1.6	1.3	1.4
Own my own home	1.2	1.3	1.3	1.7	1.3	1.5	1.2	1.2	1.6	1.0	1.4	1.0	1.4	1.7	1.0	1.0	1.0	1.2	1.3	1.3
Wife happy with employment	2.2	1.9	1.9	2.2	1.8	2.2	1.7	2.5	4.0	2.2	2.1	3.6	2.1	3.5	2.4	3.0	1.0	1.7	2.1	2.3
Recreational facilities	1.6	1.8	1.9	1.8	1.8	1.6	1.2	1.8	1.0	1.5	1.2	2.4	1.6	3.5	1.3	2.8	1.0	2.1	1.5	1.7
Educational facilities	2.2	2.3	2.4	2.2	2.0	1.7	1.9	2.1	3.0	2.2	3.1	2.8	2.1	1.5	1.6	4.2	2.0	2.3	2.2	2.3
Prestige of position	2.7	2.0	2.6	1.9	2.9	2.4	2.1	2.5	4.5	2.0	2.8	2.9	2.8	1.5	3.2	3.5	3.0	2.9	2.3	2.7
Health factors	1.6	1.6	1.8	2.4	1.6	1.5	1.3	1.6	3.0	1.2	1.3	2.5	2.1	1.5	1.6	3.0	1.0	1.9	1.5	1.8
Employment area mean	2.3	2.2	2.3	2.6	2.3	2.3	2.1	2.4	2.6	2.1	2.2	2.7	2.1	2.3	2.2	2.8	2.1	2.4	2.1	2.3

[a] Employment areas are numbered and are as follows: 1 = vocational agriculture instructor, 2 = G.I. or on farm training, 3 = high school teacher other than vocational agriculture, 4 = farming, 5 = extension service, 6 = government, 7 = fertilizer business, 8 = feed and seed business, 9 = radio or TV, 10 = livestock business, 11 = college teaching, 12 = sales, other than agricultural products, 13 = machinery business, 14 = petroleum business, 15 = banking, 16 = insurance, 17 = journalism, 18 = private business, and 19 = other. Factors are rated from one to five. 1 = little or no influence and 5 = very much influence.

Table 2. Factors influencing agricultural education graduates to leave the vocational agriculture teaching profession after five years as related to period of college graduation

Period of college graduation	Factors influencing graduates to leave teaching after five years[a] 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1940-1944	4.5	3.4	5.1	3.4	.7	.8	.2	1.1	.4	.9	1.9	1.1	1.4	.8	1.3	.2	.1	.8	1.3	2.3	.1	.6	2.4	.8
1945-1949	5.6	3.4	6.0	3.8	1.9	1.3	.2	1.6	1.4	1.3	2.5	1.5	1.6	.9	1.2	1.2	.9	1.3	1.6	1.8	.5	.5	1.5	1.2
1950-1954	5.0	3.4	5.9	3.9	1.3	1.4	.3	1.4	1.3	.4	2.5	.8	1.7	1.2	1.5	.8	.5	.9	1.2	2.6	.6	1.0	1.4	.7
Factor mean	5.1	3.4	5.8	3.8	1.4	1.3	.2	1.4	1.2	.7	2.4	1.1	1.6	1.1	1.4	.9	.5	1.0	1.3	2.3	.5	.8	1.6	.9

[a] Factors are as follows: 1 = salary, 2 = long hours, 3 = lack of advancement opportunities, 4 = too many evening responsibilities, 5 = discipline problems, 6 = personality conflicts with administration, 7 = failure to adjust to school schedule, 8 = time required for FFA activities, 9 = dislike for adult and young farmer programs, 10 = dislike working with high school students, 11 = state reports, 12 = community responsibilities, 13 = community attitudes toward vocational agriculture, 14 = dislike community standards for teachers, 15 = too short summer vacations, 16 = size of community, 17 = ethnic and religious factors, 18 = dislike teaching certain areas, 19 = too few teacher aids and materials available, 20 = little or no opportunity to specialize, 21 = poor rapport with other teachers in system, 22 = expected to teach other subject matter areas, 23 = over emphasis of athletics, 24 = wife not happy with vocational agriculture profession. Rated zero to nine. 0 = no influence and 9 = very much influence.

Decision to Enter Vo Ag Teaching

Factors having the greatest influence on the nonteaching graduate's decision to enter vocational agriculture teaching for their first employment were: felt best trained in this area, working closely with people, and salary. Owning of home and evenings free had the least influence on the graduate's decision to enter vocational agriculture teaching.

Reasons for Leaving

Graduates who left the vocational agriculture teaching profession after teaching one to five years rated the following factors as having the greatest influence: lack of advancement opportunity, salary, too many evening responsibilities, long hours and state reports. Factors influencing the vocational agriculture teacher to leave the profession after having taught more than five years were: lack of advancement opportunities, salary, too many evening responsibilities, long hours, community attitude toward vocational agriculture, and little or no opportunity to specialize.

Implications

The vocational agriculture instructor's opinion of the potential student should be considered in the selection of candidates for teacher training programs. It was found that vocational agriculture instructors influenced potential students to enroll in agricultural education and attain longer tenures in vocational agriculture teaching.

Availability and comprehensiveness of occupational information should be considered in better educating potential students as to the requirements of and rewards that can be expected from vocational agriculture teaching. This need was observed from the percentage of nonteaching graduates who were not aware of the vocational agriculture teaching profession until their sophomore year in college.

Since long hours and evening responsibilities were important factors in influencing graduates to leave teaching, they should be diminished through in-service training which will eventually lead to reduced schedules and increased availability of teaching aids. A maximum load should be determined which provides definite limits as to number of students per instructor, number of evening responsibilities, hours of work per week, and other guidelines.

Prestige afforded vocational training and employment must be improved. Guidance people, administrators, teachers, parents, and other people concerned with dissemination of occupational information should devote equal effort to providing information on occupations requiring and not requiring collegiate training.

The graduates who received the highest quality point averages were inclined to leave the teaching profession first. Either selection of potential students and graduates with lower grade point averages will have to be made, or factors will have to be found and changed that cause this reaction. Some factors tending to influence this situation may be the lack of advancement opportunity, respect for vocational agriculture in the community and salary.

Salaries should be made commensurate with duties of the occupation. Duties such as advising the FFA or adult night classes require time and effort beyond the normal teaching load and these duties should be rewarded with supplemental income just as class sponsor or coaching is for the other teachers.

Basically, persons employed as teachers of vocational agriculture and other concerned individuals must create change. They must work to overcome, by action through professional organizations and personal example in the community, factors that influence so many qualified men to leave the profession.

A Plan for a Department of Agricultural Education for 1970

WILLIAM W. STEVENSON, Coordinator for Research
in Vocational Education, Oklahoma State University

William Stevenson

The one thing we can be sure of in vocational education and in all education is change. The status quo in vocational agriculture is as impossible to maintain as a horse-centered agriculture. This is not to say that we will abandon the basic principles which have, through the years, served us so well. It is to say that we must seek new concepts, new approaches, and new methods to accomplish the tasks set for us by a changing agriculture, a new view of vocational education, and deeper insights into the learning process. Vocational agriculture instructors have proven themselves to be effective change agents as demonstrated by the tremendous advances which have taken place in agriculture. We can claim at least partial responsibility for the implementation of innovations which have resulted in these advances. Now the change process must be turned inward. We must adapt to new and expanding needs of students; we must be willing to include that which is best from other disciplines; and we must be willing to share with others our knowledge of how to make information and principles taught in the classroom meaningful to the student's life outside the classroom.

There are many factors which necessitate this change just as there are many forces which, if properly directed, can facilitate it. Three factors causing change are mentioned above—the changes in agriculture, the new concept of vocational education as stated in the Vocational Education Act of 1963, and new discoveries about how people learn. One force affecting the change process is teacher training in Agricultural Education. The Agricultural Education Department pictured here for 1970 is hypothetical and is not intended as a criticism of or a forecast for any particular department or state. It is simply what one interested individual perceives might happen in the future.

State Situation

The Department of Agricultural Education is a part of the College of Vocational Education in the land-grant state university of a mid-western state. The College of Vocational Education includes training programs for all prospective vocational teachers. This provides for closer cooperation between all branches of vocational education and a better relationship in the high school vocational departments as blueprinted by the Vocational Education Act of 1963.

The Department annually graduates about sixty students. Of these, an average of forty go into teaching vocational agriculture, ten go into extension, and ten go into graduate study or other related work. State is the only institution which trains vocational agriculture teachers. There are a number of junior colleges which give the first two years of training in agriculture so that a number of students enter the University at the junior year.

The staff of the Department consists of a chairman, eight resident instructors, and a minimum of four doctoral candidates working as graduate assistants. Graduate assistants from other states are encouraged to take their training here while local doctoral candidates are urged to take their advanced training at another university.

Objectives

1. Recruitment and selection of outstanding high school graduates.
2. A complete, well-rounded curriculum.
3. A master's degree program structured to the convenience of teachers on the job.
4. In-service non-credit programs to keep teachers up to date in technical agriculture and teaching methods.
5. A doctoral program of sufficient breadth and depth to graduate a complete individual.
6. Integration of supporting vocational subjects.
7. Field experience spread throughout the four years of undergraduate education.
8. Close communication with in-service teachers to assure applicability of course work.
9. Systematic and continual evaluation by staff, students and vocational agriculture teachers.
10. Curriculum flexible enough to allow specialization in the various fields of off-farm vocational agriculture.

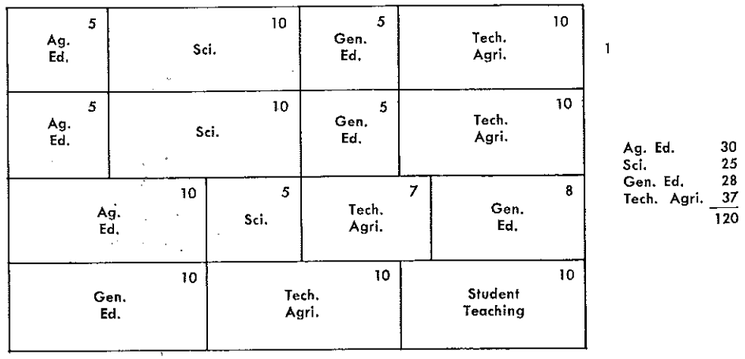
Recruitment

The aim of the recruitment program is directed primarily at securing the top students from Vocational Agriculture Departments over the state. Top students are considered to be those who show outstanding leadership ability as well as academic achievement. Enrollment is not restricted to these students, but they are the ones who are encouraged to enter the program. Farm experience or experience in some type of agricultural business is considered a prerequisite to graduation.

Recruitment practices are aimed mainly through the vocational agriculture teachers. Staff members and graduate assistants are available for group meetings and individual conferences with high school students. College career days acquaint visiting high school students with college life and potential careers. Staff members work with vocational agriculture teachers on local career programs. Student teachers are some of the Department's most effective recruiters. They are given special training in presentation of career information to the students of the schools in which they work.

Curriculum

The program of instruction in agricultural education has four main divisions consisting of professional, technical, supporting science, and general education. Professional education is dispersed throughout the four-year program with concentration in the final two years. One course in agricultural education is taken each semester of the freshman and sophomore year. Some general vocational courses are included in the curriculum to give the students a broad view of the total program of vocational education. The supporting science courses are concentrated in the first two years with a few advanced courses given in the junior and senior years. Technical agriculture courses are given throughout the four years with a concentration of block courses taken just before student teaching. The general education courses are covered in the last two years of instruction. These courses include psychology, sociology, and history and philosophy of education.



An advisory group made up of successful teachers and State Department supervisory personnel assist in review of the curriculum to assure its practical application to actual problems faced by present and future teachers. Specialization in one field of technical agriculture including some advanced field experience in off-farm agricultural business is allowed for students who hope to teach one of the new phases of vocational agriculture.

Student Teaching

Field experience is a part of every year's training. The first two years are mainly observation and self-evaluation. The student has an opportunity to decide early in the training program whether or not he wants to teach. This time in the classroom and working with an experienced teacher affords each student an opportunity to evaluate his own potential to be a successful teacher.

The student teaching period includes a two weeks' "September experience" at the beginning of the senior year. Actual teaching experience is for an eight weeks' period during the first or second semester of the senior year. Careful attention is given to selection of the cooperating teacher and school. The supervising teacher is encouraged to make certain that conditions in the department, the school, and the community are conducive to the greatest learning experience for the trainee. Continual evaluation of all aspects of the student teacher's experience is made in order to keep the program at its highest quality.

In-Service Education

The in-service education program of the Agricultural Education Department is divided into a credit and non-credit program. The credit program, which leads to the master's degree, is set up with convenience to the teachers in mind. Many courses are held at extension centers which are convenient to teachers. These courses meet in afternoons or at night once a week and are taught by faculty from the Education, Agriculture, or Agricultural Education Departments. These are largely participation courses in which planning and organization are of primary consideration. Summer courses are offered which are designed to meet the needs of teachers on the job. Technical agriculture courses make up a large part of the offering. Courses are of six weeks' duration since teachers are allowed this length of time for professional improvement every other year.

In-service non-credit programs are designed to keep teachers up to date in their technical field. Short courses of two or three evenings' duration or one week in the summer stress the latest information in the fields of agricultural mechanization, plant and animal science, and farm business management. These classes are available close to teachers and are aimed at meeting the teacher's immediate need for current information in production agriculture and agricultural business.

Research

One staff member devotes full time to research, teaching courses in research, and advising doctoral candidates. In addition, all staff members are encouraged to engage in research. Cooperative planning on project type research is conducted as a joint effort within the staff including graduate assistants. This is designed to break up major research problems into units which can be completed comparatively quickly but which, when combined with other work, will yield significant results.

The research staff member works closely with graduate assistants and is not assigned advisory duties for undergraduate students or master's degree candidates. Since his main responsibility is for research and graduate advising, this staff member is available for the necessary close consultation with doctoral candidates. Federal funds are used whenever possible to hire additional graduate assistants and to finance more extensive research.

Close cooperation between all the areas of vocational education in conducting joint research is another link which tends to pull the various branches together. The vocational research coordinating unit of the University is closely consulted in planning research programs.

Staff

Staff members share responsibility in all areas but specific assignments are made. One staff member has primary responsibility for the field experience program with some assistance from other instructors. One instructor is assigned primarily to in-service education for teachers. Responsibility for advising doctoral candidates (mainly graduate assistants) is assigned to another instructor. The remaining staff members are assigned to advising undergraduates and master's degree candidates. A specialist in sensory aids, adult education,

(Continued, page 138)

In-Service Training in Forestry

EDWIN R. OLSON, Vocational Agriculture Instructor, Mosinee, Wisconsin

Most teachers of vocational agriculture are genuinely interested in improving the level of forestry teaching, both for high school students and adult groups. Although they are convinced that additional emphasis on forestry is high desirable, many teachers say that the experience and preparations they have received does not provide them an adequate background in this area. In this connection, it is natural for teachers to look to teacher trainers and supervisors in vocational agriculture to provide more in-service training and assistance in forestry.

Need for Forestry Training

In the United States there are 648 million acres of forest land, or about one third of the total area in the United States. Commercial forest lands make up 485 million acres or about three-fourths of the forest land that can produce commercial timber crops. The national forests contain 181 million acres of land which includes 85 million acres of commercial forest land. Nearly 45% of the land in Wisconsin is covered with timber. Farmers own 41.4% of the total commercial forests in Wisconsin with an average of 65 acres per farm. The future of Wisconsin forests and forest industries is bright if properly managed. Recognizing this need, nine paper mills looked for a way to build a sound forest economy and a storehouse of Wisconsin's natural resources.

Cooperation of Industry and Education

In 1944, Trees For Tomorrow, Inc. was founded to encourage reforestration. Today its membership consists of 14 paper mills and seven power companies. Its purpose has been expanded to cover the full range of resource development. It is here that about 40 vocational agriculture teachers receive their in-service training in forestry and conservation in an annual three-day workshop sponsored by the Guido Rahr Conservation Fund.

Prior to the 1960's, all vocational agriculture teachers in Wisconsin, who were surveyed about forestry training, stated that they had no formal training in forestry, but many had attended the Forestry Workshop at the Trees For Tomorrow Camp.

Typical Forestry Workshop

Welcome—M. N. Taylor, Executive Director, Trees For Tomorrow, Inc.
Teaching Guides For Forestry Projects That Can Be Done in a Standard Class Period
Soil and Water Conservation Funds Available For School Forest Development
Group No. 1—Land Measurement—Aerial Photographs—Survey Systems
Group No. 2—General Principles of Forest Management
Group No. 1—Forest Inventory Methods (Emphasis on Latest Techniques of Measurement)
Group No. 2—Forest Management (Natural Reproduction Methods)
Panel—Camp Ground and Recreational Planning
Group No. 1—Plantation Management (Hazards to Young Plantations-Planting Economics)
Tree Planting and Shelterbelts
Christmas Tree Production
Group No. 2—Measurement of Standing and Cut Forest Products (Use of Scale Sticks-Cruiser Stock-log Scaling-cord Measurement)
Group No. 1—Plantation Management Changes in Growth Rate and Form (Thinning-Quality Trees)
Group No. 2—Utilization—Visit Pukall Saw Mills, Woodruff, Forest Products (Marketing Home Uses-Harvesting Methods-Equipment, Etc.)
Forest Protection—Insects and Disease

The Trees For Tomorrow Workshop has been organized on a two year basis. It has been successful because forestry training was implemented by field and laboratory experience.

Edwin Olson

Development of a Forestry Manual

As a result of this Workshop, a Forestry Laboratory & Field Manual for Vocational Agriculture Instructors was written. It was published in 1960 by the Wisconsin Department of Conservation and is now under revision by the Wisconsin Forestry Committee. This manual enables vocational agriculture teachers to organize and teach a unit in forestry. Many instructors are now planning to offer a complete semester course on forestry in the local schools to assist the local farmers in proper management of the farm timberlot. This course would include such units as:

Opportunities in Forestry
Know Your Forest
Site Selection
Planting The New Crop
Maintaining & Managing a Plantation & Forest
Harvesting & Marketing—Methods & Equipment
Forests & Government
Nursery Management

Results of Forestry Workshops

Due to requests by the vocational agriculture teachers who have attended the Trees For Tomorrow Workshop, the State University at River Falls is now offering two specific courses in forestry within the agriculture education curriculum. A farm forest management course will emphasize the place of the forest on the farm. The second course for future teachers will help acquaint them with specific aspects of forest management, namely silviculture.

William Stevenson

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and teaching materials has special duties in each of these fields.

All members of the faculty share in the instruction of classes along with some help from the graduate assistants. Each graduate assistant is given an opportunity to participate in classroom instruction.

Facilities

Facilities emphasize the importance of sensory teaching aids and newest copying equipment. Each student is encouraged to use these facilities in order to become familiar with their most efficient use. Trainees have an opportunity to learn to adapt agriculture teaching materials to use in movie cameras and projectors, slide cameras and projectors, Thermo Fax copiers, and overhead projectors and tape recorders.

Conclusions

The most important part of any department of agricultural education, the wisdom and dedication of the staff, is given special consideration. Men of wide experience in teaching vocational agriculture and a broad educational background are constantly sought. After being hired they are given the freedom to develop programs of instruction which will best fit young men for success in teaching vocational agriculture.

Providing Information About College

J. C. ATHERTON, Teacher Education, Louisiana State University

One of the most important decisions a young person faces is his choice of a career. In numerous instances the teacher of vocational agriculture may be called upon to assist the individual in this area.

What should the teacher do about providing occupational information? What responsibility does the teacher have in this area? These and similar questions confront the instructor. It is generally agreed that the local high school should offer a sustained program to assist the pupil in gaining the understanding he needs to make adequate decisions in his career planning. This program should challenge the individual to select a goal, decide upon a course of action, and to pursue it.

Teacher Guidance Needed Too

Although the high school may have one or more trained counselors on its staff there is still a place for guidance by specialized teachers such as the teacher of agriculture. No one member of the school faculty should feel that he has to do the job alone or that he is capable of doing it.

It seems that the local teacher of agriculture would be a logical source of counsel when the agricultural student is considering job opportunities. It is not intended that the teacher of agriculture should supplant the school counselor. He may, however, be a valuable supplement. It is recognized that in numerous instances the teacher of agriculture will be better versed than the counselor on the broad field of work in agriculture.

The fact that many young people come to the teacher of agriculture for assistance in job selection indicates their confidence in him and in his ability to give them help. The role of the instructor should be in keeping with his preparation and in consideration of other guidance services available in the school.

The opportunity to assist students in other guidance services available in making occupational decisions presents itself to the teacher of vocational agriculture in a variety of ways. During the teaching of a unit of instruction it may be advisable to point out the occupations which require this type of knowledge and skills. At times the individual may point blank ask for information concerning career choice. In other instances the student may hint that he is confronted with a problem. Under the new broader concept of vocational agricultural education it seems essential that time be devoted to teaching a minimum of one unit and possibly more of instruction on occupational information in agriculture.

Careers in agriculture are numerous and varied. The teacher is in a position to present the many fields of agriculture to the student in a challenging manner. Openings of many kinds would not be readily apparent to the individual young person without specific guidance, as his occupational experiences are usually quite limited.

It is not the responsibility of the teacher to direct or to induce a young person into following a specific career. This choice is a personal one of the individual concerned. However, much assistance may be provided in helping pupils evaluate their interests and qualifications. Then they may be assisted in determining the types of careers with which these assets are compatible. It is essential that the teacher know as much as possible about the individual interests, mental quality, personal characteristics, and specific talents of the student. Overall grades of the individual, his likes and dislikes of specific courses as well as personal information about him are useful to the teacher. The capabilities of the counselee should not be overlooked.

The monthly letter of the Royal Bank of Canada states that counseling is the process by which an experienced and qualified person assists another to understand himself and his opportunities, to make appropriate adjustments and decisions in the light of this insight, to accept personal responsibility for his choices and to follow courses of action in harmony with his choices.

This is what the teacher of agriculture attempts to do as he works with individuals and groups, and in so doing he should lead them to understand that there are headaches and discouragements in any occupation. The attractive and glamorous side should not be overplayed. The teacher should not encourage false optimism.

College Degree Needed for Some

A vast variety of occupations in agriculture do not require the four year college degree; however, there are numerous professional jobs into which entry requires a bachelor's degree and often advanced college degrees. It seems that one of the responsibilities and privileges of the local teacher of agriculture is to familiarize high school students with those opportunities and possibly to recruit likely prospects for the agricultural professions. Currently the supply of college trained persons in agriculture falls far short of the employment demand.

J. C. Atherton

In those cases where the student has chosen a professional career in agriculture, the choice of a college or university to attend becomes important. The potentials of various institutions of higher learning may be examined so that a wise choice may be made when deciding where to go for academic preparation.

Shall I go to college is one of the major questions with which many youth will be concerned. They need to realize that a college degree is essential for entry into some professions, but that not all students should plan for college entry. The individuals should be led to examine their assets and limitations so that they can make intelligent choices about the direction they will pursue. There are a variety of things they may ask themselves such as:

Do I have the ability to pursue college training?
Do I have the desire to extend my academic preparation?
Do I enjoy attending school?
What field of specialization am I interested in? Why?
Is adequate financial assistance available for me to pursue college training?
Should I consider technical training or some other type of employment?

The answers to these and similar questions will give some indication about whether college entry is advisable. Once the student has a firm objective to pursue higher learning he needs to lay plans which will guide him in this direction. Two things he will have to keep in mind and prepare for are the requirements for high school graduation and those for college entrance. His curriculum should be planned so that both will be cared for as far as academic requirements are concerned.

The teacher of agriculture because of the nature of his work and his association is in a strategic spot as far as employment or career planning is concerned for students in vocational agriculture. This activity may be one of his most vital functions.

Agricultural Development in Liberia, West Africa

by

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James Wall

Most developing countries today are not interested just in a normal economic growth rate; they have aspirations for something termed "accelerated development." These nations think in terms of leaps rather than steps in building new, modern and dynamic education, social, political and economic orders. Liberia, Africa's oldest independent republic, is no exception in this respect. Her people are voicing incessant demands for better and wider opportunities in all fields. Liberia is resolutely facing the tremendously challenging job of bringing her peoples' status in life closer to those levels which prevail in other parts of the world. Any and all efforts that are implemented to solve the problems inherent in this task, whether successful or not, will be of great importance not only to Liberia, but to the rest of Africa, to developing nations elsewhere, and to the more advanced nations as well. The future of developing countries depends, to a great extent, upon their ability to build viable social, educational, political, and economic institutions which can: (1) marshal physical and human resources for progress; (2) unerringly and equitably perform complex functions; and (3) effectively plan and implement desirable changes in the environment.

A few emerging or developing countries initiate development projects within their own intrastructure without external assistance. On her own, Liberia has initiated many worthwhile agricultural development projects. Many countries receive aid from one or more external sources. Most of the more recent developmental projects initiated in Liberia have been partially supported by assistance that came from such sources as foundations, national and international agencies, religious missions, foreign governments, and the like. Following are brief descriptions of a few closely related projects that have been recently instituted to further Liberia's development.

Operation Production

Liberia is concentrating its emphasis on production of agricultural commodities. Through its recently instituted "Operation Production," government officials at the national level have urged all citizens to participate to the limit of their resources in making the country self-sufficient in the production of rice, other edible foods, and products for export such as rubber and coffee. Committees have been appointed at the county level to help plan, implement and coordinate various projects in connection with "Operation Production." Some of the projects are new, some were begun before the advent of "Operation Production," and all of them are contributing to the agricultural growth rate of the country.

College of Agriculture

World-wide consensus seems to indicate that support of education, in all its various forms, must receive first priority in bringing about advancement of nations that are in the early stages of economic development. Attaining the goal of self-sufficiency in the production of rice, other foods and export products in Liberia will require larger numbers of adequately qualified persons than are currently available for work in every aspect of agriculture—teaching, research, extension, production and related fields. To provide such training, a College of Agriculture was established at the University of Liberia in 1961 for the specific purpose: "to assist in the development of higher education and applied research in agriculture through establishment of a faculty of agriculture and in the establishment of an agriculture extension training center." Assistance in starting the College has come from a United Nations Special Fund (UNSF) project, which is being executed by the Food and Agriculture Organization of the United Nations (FAO/UN). The length of this project is six years and it terminates near the end of 1967.

The UNSF/FAO project has provided an international faculty of six experts in basic areas of agriculture. The project manager is Chinese, is a specialist in crop breeding and is Dean of the College. The tropical crops expert also is Chinese and specializes in plant diseases. Three are two Indian faculty members, one in animal science and the other in agricultural engineering. From England came a specialist in tropical soils, and from the United States came the writer who worked in agricultural and extension education.

In addition to the UNSF/FAO faculty members, the College has experts from other sources. Rockefeller Foundation is providing a horticulturist from the U.S. An Israeli pomologist, sent by FAO/UN to the Liberian Department of Agriculture, teaches part-time in the College.

Each expatriate faculty member has at least one Liberian counterpart. These counterparts work with their respective international experts for a one-year period at the College. Providing their work is satisfactory, they are awarded a FAO/UN fellowship for advanced training in a foreign country, in Europe, the United States, or elsewhere. Upon their return to Liberia they will continue to work with the expatriate faculty members until termination of the project in 1967, at which time they will assume full responsibilities for the operation of the College. The writer was extremely fortunate in having had assigned to him a very capable young man, Clement Koha, who recently completed the M.S. Degree at Michigan State University and returned to Liberia to assume his duties as Head of the Department of Agricultural and Extension Education.

The Students

Current student enrollment in the College numbers 34 and should increase gradually as a more desirable image of the agricultural worker in Liberia emerges and becomes widely known.

The first seniors graduated in December of 1965 with the B.Sc. in general agriculture. Employment for these graduates was found in the various branches of government that deal with rural people and in businesses and industries which market and process farm products, or serve the production needs of farmers. There is a huge demand for graduates in agriculture teaching, extension, and research.

Students follow the same patterns in Liberia as they do elsewhere in the world. When they feel the need for a "group voice" they organize themselves into a club which serves as their sounding board and which tends to knit them closer together. Similarly, the Agriculture Students Association (ASA) was set up to foster a closer relationship between students and faculty members of the College, to further knowledge and interest in agriculture, and to develop in young people those indispensable leadership qualities which Liberia so desperately needs for its future growth. The abilities involved in planning, conducting, and evaluating annual programs for the ASA are strongly emphasized because of their value in any occupation in which future graduates of the College might find themselves employed.

Experimental Research

No college of agriculture would be complete without its complementary experimental research farm. Known as "University Farm," approximately 1,000 acres have been set aside for such purposes as conducting research experiments, demonstration plots, and teaching and extension laboratories. The approach to the Farm's development and use is worthy of note. As a beginning, some 100 acres were cleared of brush and a secondary road was constructed by the Liberian government. Three new buildings, a crops-soils laboratory, an agricultural engineering shed, and a 48-student dormitory are now in use on the University Farm. These buildings were jointly financed and furnished by the Liberian government and the United States Agency for International Development (USAID), with the technical equipment for the buildings being provided by the UNSF/FAO project.

Research and demonstration plots on many types of vegetables, pineapple, citrus, cassava, corn, and bananas have been started. Fertilizer demonstration plots on the Farm have proven the same things in Liberia that they have in other parts of the world—that production increases with corresponding increases in the amounts of fertilizer applied. Liberia has no internal sources of either fertilizer or lime; both of these essential items must be imported. But Liberia's farmers are being shown that the use of high-cost imported fertilizer is economically practicable at a cost of $152.00 per ton for 15-15-15. Moreover, fertilizer applied along with imported lime at $76.00 per ton also seems economically sound. And although rainfall exceeds 100 inches per year, sprinkler irrigation also seems economically sound. Consumer demand for vegetables of good quality keeps the market prices extremely high in the capitol of Monrovia and other centers of population in the country.

Livestock production also is receiving attention at the University Farm. Efforts are being concentrated on poultry, swine, and beef cattle. One of the chief problems in livestock production lies in the fact that, for all practical purposes, Liberia must import all concentrate feed that is presently consumed on commercial livestock farms. Research at the University Farm is being directed toward finding some locally grown products which can be used as livestock feed. Various species of grasses and legumes are being tested for use as feed. In order to supplement local feedstuffs, one poultry farmer living near the Atlantic Ocean puts oil drums in holes along the beach so the beach crabs will fall into them. Pulverized beach crabs furnish supplementary protein and calcium, among other things.

Another problem in livestock production is that good breeding stock is difficult to find within the country. Day-old baby chicks, for instance, are air-freighted to Liberia from Holland, Israel, and other countries. Plans are underway to develop breeding flocks and herds at the University Farm so that Liberian farmers can obtain foundation stock there at reasonable prices. At the same time, these flocks and herds also will be used for teaching and demonstration purposes.

Educational Leaders

Previously mentioned was the great need for agriculture teachers and extension workers. The training and education of these people are considered to be among the responsibilities of the College of Agriculture. The National Extension Service (NES) of the Liberian Department of Agriculture is the largest employer of people trained in teaching and extension; consequently, all programs designed to fit people for these areas are jointly planned by the College and the NES. Students enrolled at the College take two courses in teaching and extension: (1) Introduction to Agricultural and Extension Education,

Preparation of paddy for irrigated rice cultivation is being taught these Liberian farmers by a rice technician from the Republic of China (Formosa).

and (2) Methods and Program Development in Agricultural and Extension Education. In addition to these courses they are required to spend six weeks at one of the extension field offices, or at one of the schools where agriculture is taught, in order to get supervised experience.

In addition to its courses in the collegiate curriculum, the College conducts pre-service and in-service training programs for all levels of extension workers and teachers. There is great need for people who are adequately prepared for work in this field, and an Extension Training Center was established within the College of Agriculture where such people can be trained. Currently in the NES there are only eight extension agents (persons with B.Sc. level education), and 69 extension aides (persons with high school or less training). Included among the 69 extension aides are six agriculture teachers since the National Extension Service administers the vocational agriculture program. Exact census figures for Liberia are not available, but indications are that of the approximately 1.3 million people in Liberia, there are approximately 1,000,000 rural residents who need and could benefit from the services of agriculture teachers and extensionists. This figure represents approximately 250,000 rural families, most of whom reside in almost inaccessible locations and who exist on subsistence type farms where "shifting-cultivation" or bush-fallow" farming practices are used.

Predicted needs indicate that there should be a total field force of about 50 agricultural extension agents and 500 extension aides in Liberia. Even this size of work force probably would contain too few people to guarantee a self-sustaining growth rate in agriculture for the country.

(Continued, page 142)

James Wall

(Continued from page 141)

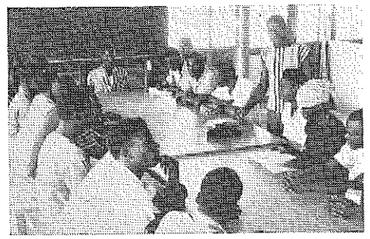
The immediate problem in the proper development of Liberia's rich agricultural resources is the lack of adequately trained people to implement programs. The College of Agriculture with its international faculty, was purposely established in the University of Liberia to help solve this pressing personnel problem.

Gbedin Rice Project

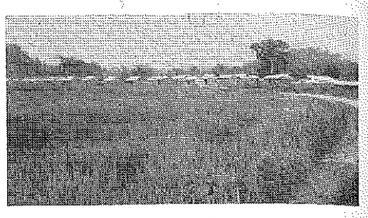
Liberians, like the majority of the world's population, depend on rice as their staple food. They obtain it through the same traditional cultural practices that have been used for centuries, the aforementioned system called "shifting-cultivation" or "bush-fallow" farming. Every year in March and April, toward the end of the dry season, the native farmers begin to cut and burn the trees on the hillsides. Untold damage is done to tropical forests during this annual slash-and-burn process. It has been estimated by forestry officials of the Department of Agriculture that 700,000 acres of dense forest come crashing down each year to make room for temporary rice fields. After the felled trees and brush are burned by the men, the wives, children, and other members of the "extended" family take over the remainder of the rice cultural operations, from "scratching in" the seeds with a forked stick to harvesting and storing the matured grain in the lofts of thatched-roof rice kitchens. An area is planted to rice only one year then is allowed to lie idle and grow back to bush for six to twelve years before it is cleared again and another crop planted.

One rice crop planted in this traditional manner takes anywhere from five to seven months to mature, and yields seldom exceed 500 to 1,000 pounds per acre. On the other hand, rice planted under permanently irrigated farming conditions yields as much as 4,500 pounds or more per acre per crop. As many as three crops can be grown on the same land each year, provided, of course that there is sufficient water available for irrigation, and a system exists which affords complete control of the water.

To introduce such practices in irrigated rice production to this country, a demonstration project was started some ten or more years ago in Liberia's largest swamp. Late in 1953, the United States Foreign Operations Administration (later the U.S. International Cooperation Administration, and now the U.S. Agency for International Development) sent to Liberia a specialist from the rice producing state of Louisiana (1) to prove that irrigated rice could be produced under Liberian conditions, and (2) to extend this knowledge to the native farmers. The rice specialist determined that Liberian swamps would produce more rice per acre than high land, and that rice production throughout the country could be greatly increased if proper supervision and support were given to the program. Lack of adequately qualified Liberian personnel to operate the demonstration project caused it to be discontinued in 1958.



Members of the farmers' cooperative at the Gbedin Project discuss their mutual problems concerning loans made to them while undergoing training.



Liberian farmers at the Gbedin Project build temporary houses with loans made to them through their cooperative. At the end of a specified training period, they can purchase their land from the cooperative and become owner-operators.

In the latter part of 1961 the Gbedin Land Development and Resettlement Project was initiated by the Liberian government to take up where the rice demonstration project left off. This latest project is a scheme to develop 3,000 acres of the 15,000-acre Gbedin swamp for irrigation agriculture and improved upland (dry) farming, and to train and resettle 600 families in improved communities on the land as permanent owner-operators.

In this project, much the same as with the UNSF/FAO project to establish the College of Agriculture at the University of Liberia, assistance from various sources outside the country has played a key role. One outstanding aspect of foreign technical assistance to this project has come from the Republic of China (Formosa) in the form of 15 rice technicians and irrigation engineers who arrived in Gbedin early in 1962. Their first job was to construct a small dam to provide water for irrigation during the dry season. This done, they planted and harvested their first crop of eight acres of rice using some varieties which they brought from Taiwan. Later they introduced other varieties of rice as well as some varieties of vegetables, soybeans, etc. They also adapted and perfected the Chinese farming methods through six successive crops on the same land. Following this, six Liberian farm families were moved to the project where, under the able direction of the Chinese technicians, they received first-hand training and experience through three successive rice crops. Excellent results were obtained in all these pilot or preliminary steps in the development of the project.

Early in 1964, 70 Liberian farm families were selected and resettled in temporary housing in a new community at the Gbedin project and they now have gone through many rice cultural cycles using irrigation practices. These families also received training in improved cultivation of upland crops. When they arrived at the project, each family was assigned about 2½ acres of irrigable swamp and 2½ acres of upland area. The head of the family was loaned money by the Liberian government with which to build a cottage. A farmers cooperative was set up to handle the credit arrangements and it also holds title to the land. The farmers purchase small tools, equipment and supplies through cooperative loans. After going through a number of rice cultural cycles and receiving additional training in vegetable and poultry production, each farmer purchases from the cooperative the land which he has been working.

Finances for development costs and loans made to those farmers thus far have been obtained by the Liberian government through the so-called PL-480 program. The PL-480 program is an arrangement whereby the United States government makes available to a foreign country, e.g. Liberia, on a credit basis certain surplus U.S. agricultural commodities which can be used by that country to generate funds for support of its agricultural development projects. The foreign government repays its obligation to the U.S. with interest. Loans made to Liberian farmers from the PL-480 funds have been used for equipment, supplies, housing, and initial subsistence while the first crop was under cultivation at Gbedin.

The need for extending the successful achievements of the Gbedin project to other areas of Liberia has been recognized by government officials. As a means of accomplishing this job the Gbedin Agricultural Training Center has been planned to serve farmers who cannot participate in the Gbedin Land Development and Resettlement Project. Furthermore, the Training Center is used to develop technical agricultural competencies in teaching and extension personnel, and to serve the practical agricultural training needs of high school and college students. Training of farmers is the primary objective of the Center. The aim is to provide a type of intensive training that is not possible in the present extension and teaching structure. It is felt that extension methods now in use will become more effective if applied to farmers who have received some training at the Center.

Outside assistance in conducting some of the activities at Gbedin has come from many sources, such as the technical rice specialists from the Republic of China and the cooperative and credit program of assistance from the United States Agency for International Development. In addition, Israel is assisting in poultry development and machinery maintenance and training. Also FAO/UN is assisting with a citrus expert, a home economics specialist, and a soils expert. The UNSF/FAO project at the College of Agriculture made available its faculty members to help in the development of teaching materials and audio-visual aids for use in training programs of the Gbedin project.

Freedom from Hunger Campaign of FAO (FFHC)

At present Liberia does not produce all the rice it needs to feed its 1.3 million people. Each year 30,000 tons of rice are imported at a cost of $4.5 million in foreign exchange. But Liberia does possess potential for growing more rice. Coupled with its annual 100 to 180 inches of rainfall the Department of Agriculture estimates that there are 720,000 acres . . . approximately three percent of the total area . . . of freshwater swamps which possibly could be used for irrigated rice production.

To develop these swamps, Liberia sought the assistance of the Freedom From Hunger Campaign of the FAO/UN to teach farmers improved rice growing methods. In 1962, with funds donated to the Campaign by the Evangelical Churches of West Germany, two experts came to Liberia to teach swamp rice cultivation. An extension specialist from Ceylon has been training extension workers in swamp rice techniques, and a rice agronomist from India has been selecting and improving Liberian varieties of rice and introducing new ones from other countries.

Government emphasis on rice production through its "Operation Production," with assistance from the FFHC project, has produced good results. In 1961, it was estimated that only 500 acres were devoted to swamp rice in Liberia. During 1962 the figure rose to more than 10,000 acres, and in 1963 to 30,000. Expectations were that by the end of 1965 more than 50,000 acres would be planted to swamp rice. Even with these rates of acreage increase it will be some time before Liberia becomes completely self-sufficient in rice production, because as in other countries, as food production increases, the increase in population growth will tend to offset it.

Summary

The reader might conclude that Liberia is extremely fortunate to be receiving all this aid and assistance for its development, and it is fortunate in a sense. But, it should be recalled that Liberia receives much of this assistance through loans which she must repay with interest. In reality, *all* external assistance received by the country is matched dollar-for-dollar by Liberian counterpart contributions, and this "matching" frequently exceeds the amount received from sources outside the country. The job of coordinating the various activities of all the expatriate experts working in the country, in order to avoid overlap and duplication of effort, is a hugh task. Providing logistical support for such far-flung activities presents government officials with a multitude of problems. The personnel of the Liberian Department of Agriculture are to be commended for their efforts in coordinating these programs. Liberians seem to thrive on such challenges. And it is personally rewarding to foreign specialists to work alongside a nation of people who are "pulling themselves up by their own boot straps."

Book Review

GUIDANCE IN AGRICULTURAL EDUCATION by Harold M. Byram. The Interstate Printers and Publishers, Inc., Danville, Illinois. 1966. 298 pp., illustrated. Price: $5.25.

This book is written specifically for teachers of agriculture and guidance counselors to help provide educational and vocational guidance for the youth with whom they work. It has been revised to provide an understanding and knowledge of the growing number of occupations designated as agricultural occupations.

The theme of Dr. Byram's book may very well be stated as "the guidance and counseling role of the teacher of agriculture." This is very timely because at no time in the history of agricultural education has Federal legislation more clearly mandated that guidance and counseling be a role of the teacher of agriculture.

GUIDANCE IN AGRICULTURAL EDUCATION enables teachers of agriculture and guidance counselors to more adequately understand the interests and background of youth who may be interested in education for agricultural occupations.

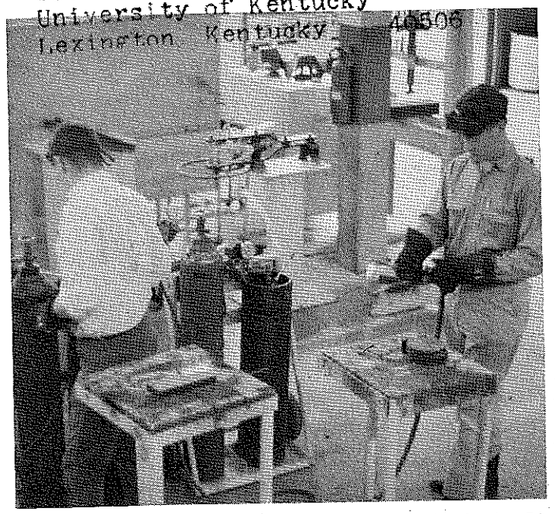
For many teachers a gap will be filled by the chapters on Understanding Students, Helping Students to Succeed, and Effective Conferences with Students, Parents, and Employers.

Specific practices for teaching occupational information in a career unit and using occupational information in teaching technical agriculture subject matter are given. Each chapter also has a list of suggested activities which involve both teacher and students. Selected references at the end of each chapter, footnotes, and Appendix A serve as a valuable source of occupational information and related materials for the readers.

This book is valuable as a reference and every teacher of agriculture should have access to a copy either in his own professional library or in the department or school library. It is being used as a text in programs of in-service and pre-service education for teachers. The writer of this book review has used the first edition effectively in both graduate and undergraduate courses. He welcomes the opportunity to use the revised edition with teachers of agriculture and guidance counselors.

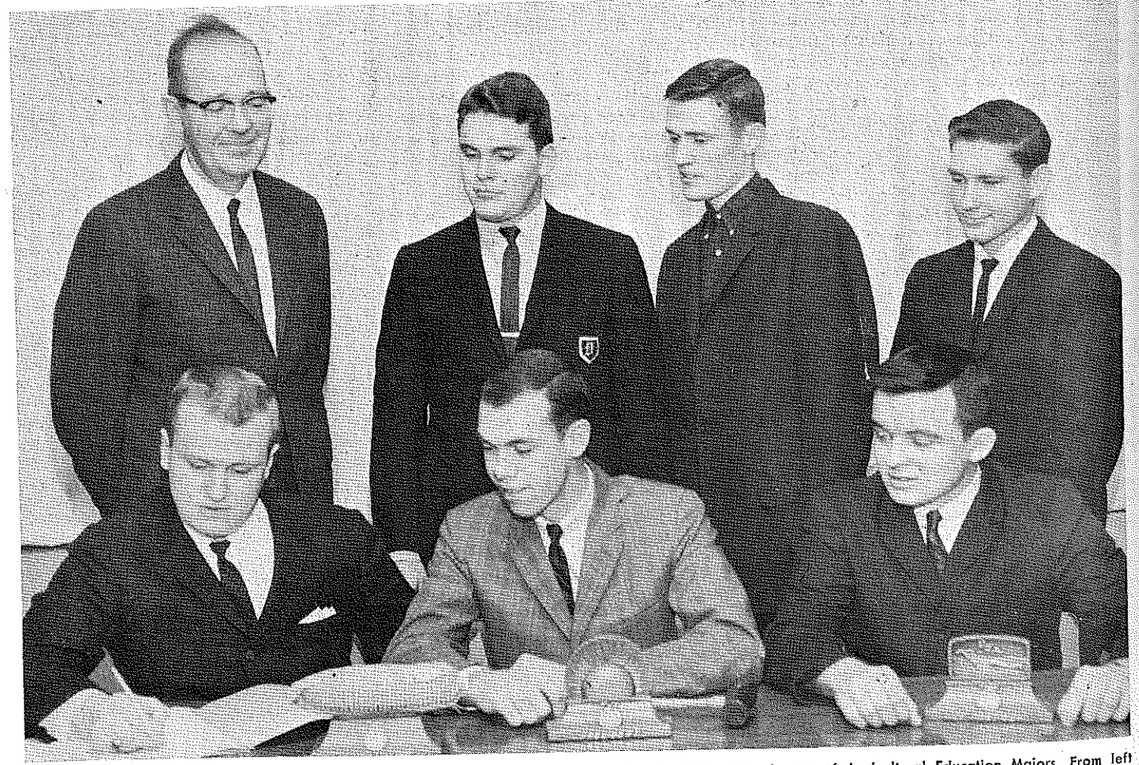
Norman K. Hoover
Department of Agricultural Education
The Pennsylvania State University

Stories In Pictures



Students participate in welding skills contest sponsored by the Ag. Ed. Club at the University of Illinois.

New officers and future teachers of the Ohio Agricultural Education Society being congratulated by their advisor, Willard Wolf.



Talking over their duties for the school year are leaders of the Southern Illinois University Collegiate chapter of Agricultural Education Majors. From left are seated: James H. Davis, Pinckneyville, secretary; Albert Kern, West Frankfort, president; Richard Sims, Palmyra, vice president; Standing: Eugene Wood, faculty adviser; William Bradley, Ridgway, reporter; Michael Colbert, Norris City, treasurer; and Thomas Nikrant, Ashley, sentinel. The organization is for college students interested in making agriculture education a career.

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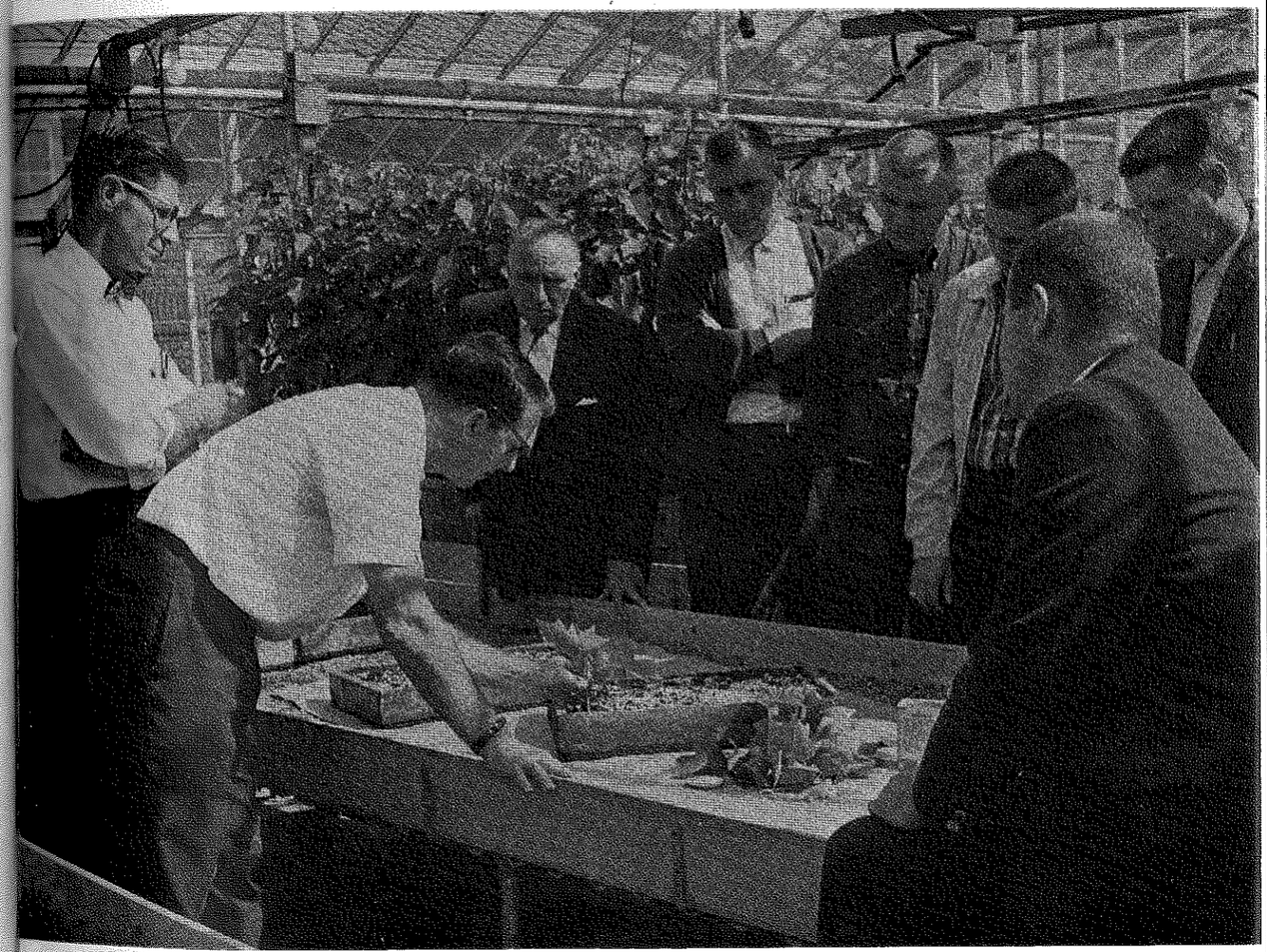

Dr. Dominic Durkin, Professor of Horticulture explains some of the fine points of plant propagation to teachers of vocational horticulture in Education 5180 at Purdue University. The teachers left to right are: James McDonald, Southeast Cass; James Little, Lowell; Phil Coffman Centerville; Robert Meyerholtz, Brookville; Ray Orman, Burney; John Schopmeyer, Tippecanoe School Corporation; and Lynn Addison, Clinton Central.

Featuring—

GRADUATE STUDY

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