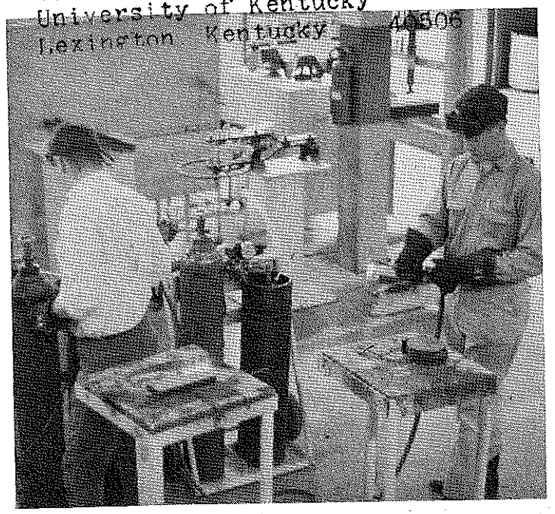
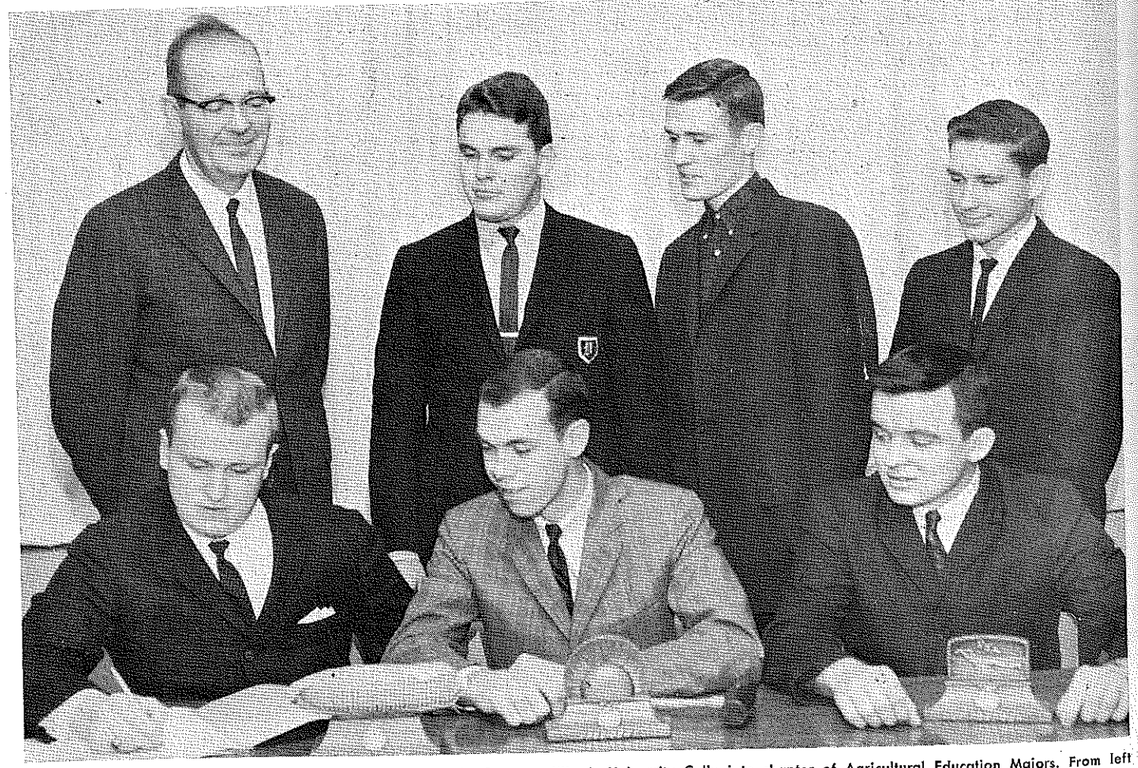
Stories In Pictures



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.

Agricultural . . . . . Education

Volume 39 January, 1967 Number 7

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

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TABLE OF CONTENTS

Editorials

Graduate Study

Many of the issues in graduate study are ably explored by Ray Cardozier in his feature article this month. He speaks plainly of many problems, for institutions as well as teachers and others concerned. It would be a professional service, I believe, if you would read this article carefully, reacting directly to Ray or through a follow-up article in this magazine. Surely, we must come to grips with some of these issues.

My purpose here will be to examine the issue of Graduate Study in a little different setting. That is, how do we in Agricultural Education "see" graduate study for ourselves? How does our attitude and action toward graduate study compare with other educational groups?

It seems clear that the greatest increase in graduate study in recent years has come from people in Cooperative Extension. From apathy and lack of concern for graduate study on the part of many leaders as well as county personnel, they have moved into a very encouraging (some even suggest "arm-twisting") role, participating in graduate study. This applies to state-level personnel as well as county leaders. In some states the changes in attitude and in numbers of people involved in graduate study have been phenomenal. A recent survey of State Extension Directors about the future of graduate study revealed that *all* Extension Personnel would be expected to hold graduate degrees in the very near future.

There has also been a noticeable change in the content or subject matter in many of the graduate programs, particularly at the master's level. That is, a shift from the "practical," "immediate-answer-to-my-problems" type of courses to programs designed to develop understanding of theories and principles underlying our problems. Such a change does not always come easy, especially to those of us who have made a major issue of having everything practical and of immediate use.

This gets us into philosophy of education and cannot be pursued here, except to state once more that to overdo the practical in study is to shortchange the educational process. To devote graduate study entirely toward helping solve present problems makes about as much sense as limiting the study of agriculture to what is now going on in a local community. In fact, this is not really possible in these days, because even the most local problem is greatly affected by influences outside the community, whether this be a personal problem or one in farm management. Similarly, concentrating on your present job as a basis for graduate study is too limiting. So, the teacher who goes into a graduate program expecting to get material that he can use directly in his teaching program will be disappointed. Any worthwhile graduate program must have higher aims.

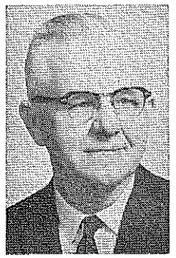
Why doesn't a larger percentage of teachers of vocational agriculture do graduate study? Many very good personal reasons can be given. These sound valid until so many teachers have shown that they are of questionable validity by going ahead to graduate school in spite of perfectly "good" reasons for not doing so.

What about the supervisors and teacher educators? Well, the teacher educator doesn't really have much choice. At the college and university his rank, figuratively and actually, is closely tied to his graduate study. Apparently those in teacher education are interested in graduate study or they would not enter this field, since the demand is clear, whatever the motivation. This does not seem to hold for the supervisors. At least, relatively few of them have chosen to seek graduate degrees beyond the master's and some in years past did not go beyond the bachelor's degree. Some have suggested that doctoral programs do not meet their needs as supervisors.

The suggestion here is this: *Every person in Agricultural Education should be doing graduate study on a continuing basis.* Not necessarily on a degree basis, that's another matter. Of course, this must be on a part-time basis most of the time, while pursuing full-time work. However, it is strongly believed that when doing graduate study for a degree that most of the program should be done in residence at the college or university. To get a master's degree by driving in for classes in the afternoon or evening is to miss much of the value of graduate study. The availability of many more graduate assistantships, as indicated in the listing this month, will help make full-time study available to more teachers. See the statement by Richard Cobb in this issue.

How long has it been since you were in a graduate course?

Cayce Scarborough



Cayce Scarborough

Theory and Practice

The editorials in *The Progressive Farmer* on the evolving role of the county agent have been very interesting. One of these asked, "*Is Your County Agent on the Way Out?*" I wonder if they received a lot of letters of protest from county agents. And, I wonder what our response will be when the editors raise similar questions about the role of the teacher of vocational agriculture.

Speaking of the PF, they too have been suggesting that our terminology may need up-dating. Note the following:

Do Farmers Need a New Title?

■ Everybody is getting new titles these days. "Janitors" are now "custodians." "Peddlers" and "salesmen" are now "sales consultants" or "representatives." Truck drivers have become "machine operators." Every college wants to be called a university. And so the name-changing game goes.

Perhaps agriculture should get in the act. Cotton, wool, and mohair producers could introduce themselves as "fiber producers." A rancher or feedlot man could call himself a "food animal producer." Those who depend on grass or forage could dub themselves "cellulose producers." Already, hogmen call themselves "pork producers."

It's something to think about!

Driver Education people are suggesting that teachers need to have experience in the areas of their teaching. "Too many driver educators have to tell student drivers how to pull out of a skid without ever having done it successfully themselves," says Gus Whitehurst of the National Safety Council. O.K., O.K. We have been advocating this sort of teaching of teachers for a long time. However, there must be a limit to this idea somewhere, for teachers as well as preachers.

(Continued, next page)

Theory and Practice

(Continued from page 147)

An interesting story, *"Woodlands Classrooms"* in Union Camp's quarterly *Contact* published last summer. It tells of the forestry program operating in 43 Georgia schools, classes as well as the school forestry labs.

Did you see the recent announcement from Cornell that, *EDUCATION DEPARTMENT DROPS "RURAL" TITLE*? So, an old landmark disappears. The announcement stated, in part, "The new name reflects the present scope of the department. Emphasis has been shifting from the training of teachers for agriculture, science and elementary grades, to research on educational problems." It was noted that training of teachers would continue, and recognition of a changing agriculture was indicated by stating, "In the field of agriculture, secondary school courses have been expanded from farm operation and management to include others serving the large portion of the agricultural industry which is not on the farm."

ACTIVE CHAIRMAN OF THE BOARD

Orville Thompson

Orville Thompson is completing his term as Chairman of the Editing-Managing Board of *The Agricultural Education Magazine*. As chairman for the past three years, Dr. Thompson has led the members of the Board in becoming more active in the affairs of the magazine. During his term of office the magazine has improved in appearance as well as in the financial situation. Operating policies of the Board have been revised and updated.

Dr. Thompson is head of the Department of Agricultural Education, University of California, Davis.

How do you like this letterhead?

FRED E. LAY — *TEACHERS OF AGRICULTURE* — W. HAROLD HUGHES

Department Of Agricultural Education

ADULT FARMER EDUCATION
YOUNG FARMER EDUCATION

Tabor City High School
TABOR CITY, NORTH CAROLINA

VOCATIONAL AGRICULTURE
FUTURE FARMERS OF AMERICA

Fred Lay is former president NCVATA and Harold Hughes is in his first year teaching.

Twin brothers completed doctoral graduate study at University of Wisconsin. An article by one of the Matteson twins appears in this issue, one by the other will be in a later issue. Walt Bjoraker says that they are identical twins and people have difficulty knowing which is which!

I hope that 1967 will be the best year yet for you and yours.

Cayce Scarborough

NEWS & VIEWS

Dr. J. Y. Terry has recently filled the position as teacher trainer in Vocational Agricultural Education at Louisiana Polytechnic Institute at Ruston.

Graduated from Louisiana State University June 2, 1941 with Bachelor of Sciences in Vocational Agriculture;

Received M.S. in Vocational Agriculture from L.S.U. June 2, 1952;

Awarded Ph.D. in Vocational Agriculture from L.S.U. January 26, 1960;

Taught Vocational Ag. in Winn Parish from 1945-1960; was Area Supervisor for Vocational Ag. State Department of Education 1960-64; was Executive Assistant for Voc. Education, State Department of Education 1964-66.

Agricultural Education staff in the H.S. Office (Messrs. Hunsicker, Lacey and Foltz) met with key representatives in the Department of Labor, Department of Agriculture, HEW and the Bureau of Census on developing plans for implementing a Nation-wide survey of "Projections of Employment Opportunities and Training Needs in Agriculture —1975." Representatives from all participating departments were enthusiastic about making such a study and were convinced that it should have number one priority among other agricultural studies. Each department will provide one person to serve on a developing committee and it will be appointed a larger advisory committee comprised of representatives from agricultural trade organizations, farm organizations, manufacturing associations, National Academy of Sciences, as well as the participating government agencies. H. N. Hunsicker was asked to work with Dr. Otto Legg and Mr. Bernard Yabroff in developing a small 4(c) project to provide funds for designing and implementing a larger project. It was agreed that it was imperative that the study be gotten under way immediately as there was a definite need for the information by workers concerned with agricultural employment in all departments.

H. N. Hunsicker, Paul Gray, Otto Legg and Phil Teske conferred with Dr. Harold Binkley, Head Department of Agricultural Education, University of Kentucky in designing a training proposal for State leaders in agricultural education to improve the FFA as a teaching device.

V. R. Cardozier

ISSUES IN GRADUATE STUDY

. . . . . For Teachers

V. R. CARDOZIER, Teacher Education, University of Maryland

The topic is not one in which everyone is vitally interested. Yet, to someone beginning or planning graduate study, the issues merit serious examination. More, perhaps, than most people realize, various professors and various institutions have differing concepts of the nature of graduate study.

It is not the purpose here to present the "correct" view concerning any issue; by definition there is no correct view concerning an issue. The purpose is to identify the issues and to present different points of view, with the rationale underlying each.[1] This discussion deals largely with graduate study leading to the master's degree.

Who Should Do Graduate Study?

The first issue involves who should be admitted to graduate schools—that is, admitted for graduate study with the master's degree as the objective, as contrasted to admission for course work only. Most graduate schools require that those admitted show evidence of potential for success in scholarly work. This normally means a grade point average well above the minimum for graduation from college. In most institutions, one is required to have a minimum grade point average of "C" for graduation with a bachelor's degree. However, most institutions require an average of "B" in all course work completed for the master's degree. Those who require a "B" average or close to it for admission to graduate school argue that if an individual has fallen very far short of a "B" average in undergraduate study, he cannot be expected to achieve a "B" average in graduate level courses, which are presumably more advanced and in which greater ability is required.

This principle is widely supported in many universities, especially among graduate faculty in the basic arts and sciences, and including a sizeable percentage in education. On the other hand, many graduate faculty take the position that any teacher who has completed minimum requirements for the bachelor's degree should be admitted to graduate school and given an opportunity to pursue the master's degree. Some also say that if the teacher applies himself and works to the best of his ability, he should be assured of receiving a master's degree. It is pointed out that further study is essential for teachers, not only because it is required in many states for continued certification, but it is necessary if teachers are to grow and improve professionally.

Teachers who do not qualify for admission to a graduate school that has high admission standards can qualify for admission on a special student basis at most institutions. Teachers in this category counter that they consider it discrimination if their fellow teachers receive the master's degree for a given amount of graduate study while they receive no degree for the same number of credits of post-bachelor's study. In addition, they add that many courses which they need as teachers are open only to graduate students, and if they cannot be admitted to graduate school, they are excluded from these courses.

Inservice Training or Graduate Education?

Part of the admissions question involves the nature of graduate study. Historically, graduate schools have said that graduate study should be oriented toward scholarship, i.e., the acquisition of knowledge of greater depth and complexity than can be acquired at the undergraduate level. It should aim for greater specialization in the discipline. The study was supposed to lead to the development and understanding of principles and theories, rather than practice only, which tends to characterize most undergraduate study in professional fields.

As teachers began to return to college for further education, there developed an opposing point of view which views the master's program from the standpoint of professional improvement of the teacher for his job, rather than mastery of a body of knowledge.

This was stimulated by certification requirements and salary schedules. While research has not yet established conclusively a positive relationship between graduate study and teaching performance, most people accept the proposition that teachers who pursue further study are likely to become more effective than those who do not. Boards of education, in a desire to reward improved competence, but lacking adequate measures of teaching effectiveness, chose to reward additionally those teachers who complete a master's degree or equivalent.

The implication that study resulting in the master's degree would qualify the teacher to do an improved job of teaching, plus the extra pressures for graduate study placed on teachers, caused some graduate faculty members in education to view the master's degree and the program leading to it differently from their colleagues in the basic arts and sciences.

What is the difference between inservice training and post-graduate education? The difference is not always precise; however, most professors would probably accept the premise that inservice training is concerned largely with operational problems faced by teachers in their own classrooms and teaching situations, while post-graduate education is based on gaining an understanding of the principles and theories of the discipline and may or may not include all of the problems which teachers currently face in the classroom.

Some professors of education[2] consider inservice training as the best type of study for teachers. Further, that if this is what is needed most by teachers, this should be the content of master's programs. On the other hand, some professors say that the courses and study should be intellectually beyond what is expected at the undergraduate level.

(Continued, page 150)

[1] Credit is due Dr. A. H. Krebs for some of the points and rationale. See Chapter XI, "Graduate Programs for Teachers of Agriculture," which he prepared for the forthcoming book on *Teacher Education in Agriculture*.

[2] The term "professors of education" includes professors of agricultural education.

Issues in Graduate Study

(Continued from page 149)

One of the proponents of essentially the inservice training position is Dr. J. B. Conant, formerly president of Harvard. In his book, *The Education of American Teachers,* Conant says that for the master's degree "courses should be allowed for credit toward the 30 semester hours whether or not the courses are of an elementary nature, provided they are clearly courses needed to increase the competence of the teacher."

Recent changes in the objectives and content of vocational agriculture have resulted in many teachers being faced with teaching in which they have had little or no preparation. Most teachers have found it necessary to pursue additional study. For many, the need is clearly for elementary, not graduate, courses. In horticulture, for example, it might mean courses that are taken by sophomores and juniors in college. According to Conant's principle, a program consisting of courses at this level should be acceptable to the master's degree if it meets the teacher's professional improvement needs.

Many deans of graduate schools have deplored the fact that graduate students are permitted to take junior and senior courses as part of their master's programs. They have also questioned whether graduate professors were requiring the level of knowledge and understanding that should be achieved in post-graduate level study.

Some professors have pointed out that their institution is committed to accepting for graduate study all teachers who have graduated from college and that their master's program is oriented toward meeting the inservice training needs of teachers. With those commitments in mind, the faculty would be unfair in expecting all teachers to perform at a level expected in a rigorous graduate program. In short, the professors should expect to scale down the expectations of performance to the level that can be achieved by all teachers who enroll in the master's program.

In the debate on who should be admitted and whether the master's program should be inservice training oriented or scholarly in nature, professors of education, and especially those in agricultural education, are faced with loyalties not faced by other professors. Professors of education identify closely with the staff of state departments of education, who are interested in seeing teachers attain master's degrees. At the same time, agricultural education departments are not extensions of state departments of education but are integral parts of the universities and colleges and bear the same responsibility for excellence in scholarship and standards of graduate study as do professors of history, engineering, and other disciplines of study.

Education or Agriculture?

Should a teacher major in agricultural education or in a technical agriculture field while pursuing the master's degree? Most have majored in agricultural education; some have also included a minor or at least some supporting course work in agriculture. This probably has been due to availability of courses at times when teachers could enroll in them more than any other factor.

This issue seems not to be influenced much by whether the substance of the master's program is inservice training or post-graduate education. In either case, additional study in each field is doubtless defensible. One exception is the Master of Agriculture, a new professional degree found in several institutions. This degree usually allows great freedom for the individual to select courses predominantly in agriculture, but also to include some courses in agricultural education, which the individual feels will be of most value to him. This may include one course in each of several different fields in agriculture. It is truly inservice training oriented, designed to permit the teacher to fill gaps in his prior training, with few restrictions as to formal graduate status of courses.

The more typical major in agriculture consists of concentration in one agricultural field such as agricultural economics, horticulture, animal science, or some other, frequently supported by minor courses in another field, which may be agricultural education. Those who support this alternative point out that a teacher who has broad training in agriculture at the undergraduate level is wiser to concentrate in one field at the graduate level and develop enough competence in that subject to become an expert on it in his community.

Another view says that the agriculture teacher is a professional teacher and through his graduate study he should further improve his mastery of his field—teaching. This does not exclude the study of agriculture as a part of his graduate study.

Many teachers of agriculture major in guidance, administration, and other fields. In most cases, they do so primarily because of desire to prepare for a position in guidance or administration and not primarily to improve their competence in teaching agriculture. This decision is based on another professional objective and outside the purview of this discussion.

Which Degree?

Historically, Master of Arts and Master of Science were the only masters' degrees offered by graduate schools. These were usually referred to as scholarly or research degrees.

As more teachers began pursuing masters' degrees, some institutions decided that other kinds of programs leading to masters' degrees were needed for professional practitioners. Among the better known ones are the Master of Education, Master of Agriculture, Master of Vocational Education, Master of Agricultural Education and more recently the Master of Arts in Teaching.

At most institutions, M.A. and M.S. degrees require a minimum of 24 semester hours of course work plus a thesis. The M.Ed., M.V.Ed., M.Ag., and M.A.T. generally require 30 semester hours, without a thesis. However, at some institutions, they require a field study, essay or seminar paper.

The M.A.T. program, made famous at Harvard, is not widely available in agricultural education. The first M.A.T. programs were considered pre-professional in character and were designed for graduates in liberal arts who wanted to become teachers. They went immediately following graduation into the M.A.T. program where they spent a year or more taking education courses and student teaching. Some of the more recently developed M.A.T. programs differ little from typical M.Ed. programs. In at least one case the M.A.T. is designed for teachers and the M.Ed. for supervisors, administrators and staff specialists.

Thesis or Non-thesis?

More masters' degrees in education, including agricultural education, are awarded without, than with, the thesis. In many schools of education, the numbers of masters' students are so great as to make impractical the thesis program. Many professors and teachers feel that the non-thesis program more nearly meets needs of teachers who do not expect to pursue the doctorate.

They point out that the teacher is not a researcher and does not need to develop the ability to conduct scientific research. Many programs leading to the M.Ed. include a course in understanding educational research, and papers are required for the degree which are aimed at causing the teacher to study the literature on one or two topics in depth so that he can gain skill in doing the kind of library study that he should do when faced with professional problems.

Those who support the thesis for the terminal master's degree see advantages in it for the teacher who never expects to conduct another scientific study. By planning and conducting research at the level required for the thesis, the individual will gain an understanding of research that cannot be gained through studying *about* research. Further, this understanding will help him to develop the ability to analyze critically the quality of research both in education and the social sciences and in agriculture.

On Campus or Off Campus Study?

In his aforementioned book, Conant says, concerning the master's program, that "no credit toward the degree should be given for extension courses or courses taken on campus while the teacher is engaged on a full-time teaching job." The teacher who has taught a full day is not physically and emotionally prepared to attend a late afternoon or night class and profit most from it. It is further limited if the professor also comes to the class following a full day of work.

While it may be true that most of those who take late afternoon and evening courses do so for expediency, many professors point out that there are some valid reasons for them, particularly if off-campus. This is especially true for courses for an inservice training nature in which little or no use of the library is involved. For example, a course in evaluation of vocational agriculture programs might well be taught in a school setting in or near a vocational agriculture department. A course in the practice of school public relations might better be taught in a typical community where real problems and typical resource people could be called upon rather than on the university campus, far removed from typical situations.

Independent work on problems of concern is common in many masters' programs. The value lies in the fact that teachers tackle problems found in their own teaching programs. In studying and solving them, teachers not only solve a problem that may be important to them and their programs, but gain skill in solving problems which will be useful in their teaching.

Those who question "special problem" courses argue that they are frequently poor substitutes offered in institutions where the enrollment is insufficient to provide an adequate selection of course offerings. Further, they add, too often a "special problem" is simply a spurious way to "earn" graduate credits, that the study often involves the kind of activity which a good teacher should be doing as part of his regular teaching duties. Frequently, the learning—the only basis on which college credit can be awarded—is minimal or non-existent, or limited to findings which have ephemeral value.

Which Institution?

Should one pursue the master's degree at the same institution where he received the bachelor's degree or at another institution? Most professors advise going to another institution, which means going out of state for most teachers, but not all support this view. Still others advise that the individual take at least part of his work at some other institution.

Many teachers do not consider it practical to go out of state to study for the master's degree, principally for financial reasons. Others feel that they know the faculty of their own state university and feel more secure there, while they do not know what to expect at another institution.

Some professors argue that there are valid reasons for studying in state. They point out that by doing so, the teacher gains further understanding of the philosophy underlying the vocational agriculture program as it is conducted in that state, and is able to work in greater harmony with supervisors and fellow teachers.

Other professors argue that by attending another institution, the teacher will gain ideas and concepts from other professors of agricultural education. In addition, he will gain much from associating with teachers from other states.

Paid Leave for Graduate Study

In some states, teachers are required to earn a master's degree or the equivalent in advanced undergraduate study within a period of years following their entrance into teaching. For the teacher on a 10-months appointment, the problem is not great. But for the teacher of agriculture on a 12-months appointment, it creates a problem.

The school system is reluctant to permit him to leave the community and pursue graduate study in the summer on a pay status while teachers on 10-months pay basis do so without pay. Most teachers do not want to lose summer income by taking leave without pay. In addition, as some teachers have pointed out, if one takes off four full summers, administration justifiably can ask whether summer employment of the teacher is essential to the conduct of an effective vocational agriculture program.

Few teachers take leave from the school to pursue the master's degree. In some states graduate assistantships have been established specifically to encourage teachers to take leave and pursue graduate study. Many teachers feel that the difference between the stipends for the graduate assistantships and their salaries are too great to justify their accepting a graduate assistantship. A few school systems have sabbatical leave plans whereby a teacher can secure a leave at part pay after six years of service. This, coupled with a graduate assistantship or fellowship, makes leave for study more attractive.

Post Master's Study

Many school systems include in their pay scale provision for salary increases for teachers who complete a planned program of 30 semester hours beyond the master's degree. To meet this need, many institutions have developed special programs with requirements appropriate to the professional needs of those enrolled. These are identified by various titles: Advanced Degree in Education (Ed. A.), Advanced Master of Education (A.M.E.), Advanced Graduate Specialist (A.G.S.), Advanced Master of Arts in Education (A.M.A.E.) and others. None requires a thesis.

Since they are not recognized degrees of graduate schools, the graduate faculty is not as much concerned about the standards and level of instruction in those programs. Most of the issues faced in the master's program, however, also apply to the "Specialist" programs.

The Doctorate

Should a teacher pursue the doctorate? Insofar as is known, no institution offers a doctoral program specifically designed for the classroom teacher in

(Continued, next page)

FROM A GRADUATE ASSISTANT

RICHARD A. COBB, Graduate Assistant
Department of Agricultural & Extension Education
New Mexico State University
Formerly Agriculture Teacher, Zephyrhills, Florida

The graduate assistant holds a unique position in the university structure. He is on the mezzanine in the two-story framework of student and faculty.

As seen by undergraduates, the Grad. Asst. is an incompetent part-time lecturer, whose radical grading system and inability to answer even the most rudimentary problem, has become a major nemesis (along with auditorium television and standardized exams) in the machinery of a university.

Most professors picture the grad assistant as a hybrid—one-half student, one-fourth secretary, and the rest a mixture of delivery boy, card catalog, floundering researcher, test grader, and occasionally, a teacher.

The graduate assistant witnesses a dimension of the college and his major department not experienced by other students. He absorbs the "backstage philosophy" involved and integrated into the planning, preparation and presentation of course material.

The assimilation of teaching apparatus utilized in more effective classroom presentations through the innovation of overhead projection materials, electric teaching devices, and improved duplicating machines expose the graduate assistant to experiences applicable to future use.

Further benefit is gained through participation in the development and defining of research problems pertaining to the graduate's specific areas of interest. Exposure to new disciplines of thought and theories of teaching established by research projects accentuate present and future challenges to be realized.

Finally, the graduate assistant maintains an informal working contact with professors within the college department and gains new insight into the thoughts and feelings of educational leaders.

"BETTER MOUSE TRAP"—Miss Piped Piper of 1966 holds a new ultrasonic device developed for ridding food handling plants, warehouses and stores of rodents. Successfully tested in grain warehouses, the unit is now being marketed in the U.S. and Canada by Hart-Carter Co., Minneapolis, Minn. Weighing only 12 pounds, the device pneumatically generates an intense pulsating, high frequency sound only audible to rodents. These portable units, operating on 115 Volts, are placed at doors and openings where rodents are apt to enter. This sets up a "sound barricade" preventing the rats and mice from entering. Hart-Carter says tests prove 85% to 100% effective. The company points out that government figures place the annual food-stuffs losses in the U.S. by rodent damage at over two billion dollars.

Issues in Graduate Study

(Continued from page 151)

the elementary and secondary school.

However, many boards of education have included the doctorate in their salary schedules for teachers, thereby implying that they think doctoral study is desirable, at least for some teachers. Some teachers who have the ability to perform at the level expected of doctoral students have completed doctoral programs, although they prefer to continue in secondary school teaching. They reason that since they planned to pursue study comparable to the doctorate in terms of time and effort to be expended and since they felt capable of achieving the doctorate, they chose to do so. They are further motivated by the increased salary that will result while comparable study not leading to a degree may not result in comparable salary.

Many professors and school administrators contend that the doctorate is not designed for the classroom teacher. They point out that the depth and level of knowledge required for the doctorate is not consistent with the demands of teaching in the elementary or secondary school. Instead of pursuing the doctorate, which is depth oriented in a field, the teacher would gain more by pursuing study in related subjects which will give him breadth and result in his becoming better informed and a better classroom teacher. Critics further argue that elementary and secondary teachers who complete the doctorate more often do so for the prestige and pay than because the additional learning will help them to become better teachers.

ASSISTANTSHIPS AVAILABLE FOR GRADUATE STUDY IN AGRICULTURAL EDUCATION 1967-68*

Following is a listing of assistantships, fellowships and part-time instructorships available for graduate study in agricultural education, 1967-68. This is based on a survey of all institutions offering programs of graduate study in agricultural education in the United States. However, not all institutions surveyed submitted reports.

This survey was conducted under the auspices of the American Association of Teacher Educators in Agriculture. The primary purpose of this listing is to help those who are interested in pursuing graduate study in agricultural education to become acquainted with the assistantships and other aid available at institutions which offer programs of graduate study.

It should be pointed out that the survey requested institutions responding to list only aid available to agricultural education graduate students. General aid, available to all students in the institution, is not reported here.

Data provided are in the following order:

Nature of assistantship (number available); number of months available during year; beginning month of employment; amount of work expected; monthly remuneration and other considerations such as remission of fees; whether aid is for master's, advanced graduate program, or doctoral students; source of funds if other than university or state; and the 1967 deadline for application. Slight variations in this pattern are due to the nature of the data provided by reporting institutions.

University of Arkansas

•Research assistantships (5); 9 mo. (3) and 12 mo. (2); September; 1/4 time; master's (2), doctoral students (3); $125 per mo. for master's students, $200-$250 for doctoral students; tuition remitted; apply by March 1.

Auburn University

•Fellowships (2); 12 mo.; September; 1/4 time; $150 per mo.; master's or doctoral students; apply by July 1.

University of Connecticut

•Research assistantship (1); 9 mo.; September; 1/2 time; $283 per mo.; master's or doctoral students; apply by March 1.

Cornell University

•Research assistantships (5); 12 mo.; June or September; 1/2 time; $225-$275 per mo., tuition reduced; master's or doctoral students; state and Federal (USOE and Hatch) grants; apply by March 15.

•General assistantships (3); 12 mo.; June or September; 1/2 time; $225 per mo.; master's or doctoral students; apply by March 15.

East Texas State University

•Assistantships (4) lab assts., 2, and lab instr., 2; 12 mo.; June (2), September (2); 1/4 time; lab and teaching assistants; $250 per mo.; master's students, one sponsored by industry; apply by July 1.

University of Illinois

•Research assistantships (2); 9 mo.; June or September; 1/2 time; $250-$300 per mo., tuition and fees remitted; master's, doctoral or advanced graduate certificate students; apply by August 1.

•Research assistantships (2); 12 mo.; June or September; 1/2 time; $250-$300 per mo., tuition and fees remitted; doctoral and advanced certificate students; apply by August 1.

•Research assistantships (4); 9 mo.; June or September; 1/4 time; $125-$135 per mo., tuition and fees remitted; master's students; apply by August 1.

Iowa State University

•Research assistantships (2); 9 mo.; September; 1/2 time; master's or doctoral students; $277 per mo., reduced tuition; supported by Iowa Agricultural Experiment Station; apply by April 1.

Louisiana State University

•Research assistantships (8); 9 mo.; September; 20+ hrs. per week; $250 per mo., reduced tuition; master's or doctoral students; apply by July 1.

University of Maryland

•Research assistantships (4); 12 mo.; June or September; 1/2 time; $260 per mo., tuition remitted; master's, doctoral and AGS students; apply by May 1.

•Fellowship (1); 12 months; September; $200 per mo. + $500 per dependent per year, tuition remitted; doctoral students; funds from USOE graduate research training program; apply by April 1.

•National FFA Fellowships (4); 10 mo.; August; part-time experience in National FFA Office; $300 per mo.; master's or advanced graduate students; sponsored by Massey-Ferguson, Inc.; apply by May 1.

Michigan State University

•Research assistantships (3); 9 mo. (summer employment available); September; 1/2 time; $333 per mo.; out-of-state tuition waived; doctoral students preferred; supported by vo-tech ed. R & D unit; apply by March 1.

•Assistantship (1); 9 mo.; September; 1/2 time; $289 per mo., out-of-state tuition waived; doctoral students preferred; supported by Rural Manpower Center; apply by March 1.

•Part-time instructorship teaching agricultural mechanics (1); 9 mo.; September; 2/3 time; doctoral students preferred; $417 per mo., out-of-state tuition waived; funds from Agricultural Engineering Department; apply by March 1.

•Part-time instructorship in agricultural education (2); 9 mo.; September; 1/2 time; $333 per mo., out-of-state tuition waived; doctoral students preferred; apply by March 1.

University of Minnesota

•Research assistantships (2); 12 mo.; July; 1/2 time; $500 per mo., reduced tuition; master's or doctoral students; apply by April.

•Teaching assistantships (2); 12 mo.; July; 1/2 time; $266 per mo., reduced tuition; master's or doctoral students; apply by April.

University of Missouri

•Research assistantships (2); 9 mo.; September; 10 hrs. per week; $250 per mo.; doctoral students preferred; apply by April.

(Continued, page 154)

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*Compiled by V. R. Cardozier, teacher education, University of Maryland for AATEA. Dr. Cardozier is chairman of The Publications Committee.

Assistantships Available

(Continued from page 153)

Montana State University

•Research assistantship (1); 9 mo.; October; 5 hrs. per week; $50 per mo., tuition reduced; master's students.

•Peavy Fellowship (1); 9 mo.; anytime; 9 hrs. per week; $150 per mo.; master's students; supported by Peavy Co.—Group Foundation, Minneapolis; apply by March 1.

University of New Hampshire

•Teaching assistantship, power and machinery (1); 10 mo.; September; 1/2 time; $240 per mo., tuition remitted; master's students; apply by January.

North Carolina State University

•Research assistantships (7); 12 mo.; September; 1/2 time; $225 per mo.; master's students; apply anytime.

Ohio State University

•Teaching and research assistantships (6-8); 9 or 12 mo.; June or September; 15 hrs. per week; $242-$292 per mo., out-of-state tuition waived, regular tuition waived for teaching assistantships; doctoral students; 2 supported in research coordinating unit; apply by March 1.

Oklahoma State University

•Teaching assistantships (2 ag. ed., 1 ag. mechanics); 9 mo.; September; 1/2 time; $275 per mo., out-of-state tuition remitted; doctoral students; apply by February 15.

Pennsylvania State University

•Assistantships (2 teaching, 10 research); 12 mo.; June or September; 1/2 time; $288 per mo., first year, $312 second year, tuition and fees remitted; master's or doctoral students; apply February 1.

Purdue University.

•Research assistantships (2); 10 mo.; September; 1/2 time; $250 per mo., reduced fees; master's students; apply by April 1.

•Instructorship, inservice teacher training (1); 12 mo.; July or September; 1/2 time; $350 per mo., reduced fees; doctoral students; apply by April 1.

Rutgers University

•Research assistantships (3); 12 mo.; July; 1/2 time; $230 per mo., tuition remitted; master's or doctoral students; apply by April 1.

•Scholarships (4); 10 mo.; July; $166-$416 per mo.; apply by April 1.

Sam Houston State College

•Laboratory assistantships; 9 mo.; September; 4 or 8 hrs. per week; $56 or $112 per mo.; master's students; apply by September 1.

Texas A & M University

•Teaching assistantships (4) and fellowship (1); 9 mo.; September; 1/2 time; $250 per mo. first year master's, $275 second year master's or doctoral; master's or doctoral students; apply by April 1.

Tuskegee Institute

•Research assistantships (2); 9 or 12 mo.; September; 1/4 time; $200 per mo., reduced tuition; master's students; apply by April 1.

Utah State University

•Teaching assistantship (1); 9 mo.; September; 1/2 time; $200 per mo.; master's students; apply by September 1.

Virginia Polytechnic Institute

•Teaching assistantship (1); 9 mo.; September; 1/2 time; $260 per mo., out-of-state fees remitted; master's students; apply by March 15.

Virginia State College

•Assistantships (2); 9 or 12 mo.; June or September; 1/2 time; $135-$165 per mo.; master's students; supported by Division of Graduate Studies and Research; apply by April 1.

Washington State University

•Fellowships (2); 9 mo.; September; $333 per mo.; master's students; supported by State Board for Vocational Education; apply by March.

•Fellowships (8); for 8 weeks summer session; June; $300 per mo.; master's students; supported by State Board for Vocational Education; apply by March.

University of Wisconsin

•Research assistantships (2); 12 mo.; July or September; 1/2 time; $257 per mo.; out-of-state fees remitted; master's or doctoral students; apply by February 15.

Wisconsin State University—River Falls

•Teaching assistantships (8-12); 9 mo.; September; 1/4 time; $200-$270 per mo., reduced tuition for out-of-state students; master's students; apply by April 1.

Letters to the Editor

Dear Cayce:

I was interested in The Bio-Ag. Ed. report in the September issue of the magazine. The entire profession needs to be alerted to activities such as these being undertaken by The Biological Sciences Action Committee on Agricultural Education. I hope you will continue the effort to identify groups who are making recommendations regarding Agricultural Education and keep us informed. There is much happening that is not being communicated to our total profession.

By the way, who formed this committee and what are the other six action committees?

Sincerely,
Gerald R. Fuller
Assistant Professor
University of Illinois

Thanks Jerry, maybe some other interested people can answer your last question. CCS

Dear Cayce:

I was glad to see the article entitled "Suggestions for Improving Teacher Recruitment" by Clifford Nelson and G. R. Cochran in the November *Ag Ed Magazine*. The only suggestion I would have for its improvement would be that the headline might well have read "Minnesota Sets an Example in Recruitment for the Nation."

The strength of the Minnesota procedure lies in the involvement of 300 teachers who devoted a half day of their 1966 summer conference to the development of appropriate procedures for recruiting an adequate supply of high-quality teachers of vocational agriculture. Who else but classroom teachers can give us the answers, and who else but classroom teachers have direct contact with some of the best potential teachers of agriculture for our next generation?

The Professional Personnel Recruitment Committee tried in the last year to call to the attention of the profession the need for a recruitment effort. The type of activity which has taken place in Minnesota is exactly what we have tried to stimulate. To date, some twenty states have organized recruitment programs underway. We hope that this report of the Minnesota program will offer useful ideas to them.

Please send me one hundred reprints of this article for the use of our committee.

Sincerely,
Ralph J. Woodin, Professor
Ohio State University and
Chairman, National Committee
Professional Personnel Recruitment

Program Planning -- A Basic in Vo. Ag.

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

"Where there is no vision, the people perish" (Proverbs 29:18) is an ancient truth, but it has current application in the field of Vocational Agricultural Education.

Technological advancement and accelerated sociological change require that vocational agricultural education be updated. The 1963 Vocational Act is a result of this change and recognizes it as it makes provisions for an expanded program of training for employment. There is a demand by the lay public that there be continuous updating of the educational program. There is an urgency also to be sensitive to current problems as well as those of the future. This should be followed with a variety of ideas on methods for solving them.

Past, Present, Future

Every phase of the educational program needs to be examined and planned. All activities should be scheduled with the means of implementation set forth. This is, or should be, an organized effort whereby the planners attempt to look into the future, to anticipate needs and conditions, and to then make decisions relating to the care for these needs. This facilitates a comprehension of the task to be done and of how the various facets of it contribute to the overall educational objective. Immediate and long-range effects of various activities are given considered attention.

It has been said that a program succeeds or fails in proportion to the thoroughness of the planning and preparation put into it. It is easy to drift into situations and find oneself largely at the mercy of circumstances. Determining what to do prior to doing it will eliminate this problem to a remarkable degree.

The vocational department is continually venturing into the future. As it makes its decisions day by day it is forming and building that future. Even a lack of planning influences the future. Where there has been no planning, convenience of the moment and expediency will determine actions and there will be no clear cut path charted through the wilderness of problems related to job preparation and job advancement. There is a great likelihood that much time and energy may be spent on items of minor significance while essential activities are slighted or overlooked entirely.

When the vocational department has formulated a program projecting ahead several years, it is in a position to better focus all its energy and efforts on the implementation of its chosen course of action. The day-to-day activities are attuned to these plans which act as a guide for all short range decisions.

Teacher's Role

The teacher should have a degree of latitude in the development of the individual educational program. However, the local community has the right to expect that the work in vocational agriculture is planned and that it is updated periodically as conditions dictate.

The teacher with the assistance of others should think through his program and then be able to outline it in a clear manner. He should examine the facts, visualize what they mean, and then plan a course of action based upon this information. Detailed planning permits the individual to examine alternative courses of action and to anticipate problems prior to the time they manifest themselves. In the long run, selecting the elements of the program of work can be made on an intelligent basis.

J. C. Atherton

Suggestions and activities should be able to stand the scrutiny of critical persons. Procedures, objectives and programs should profit by being questioned if this results in a careful analysis of the operations. Through this procedure there is opportunity to clarify items and possibly throw new light on the situation. Consideration should be given to the opinions of each member of the planning group so that all points of view may be given due consideration prior to a final decision evolving. It is essential to think things through prior to proceeding full speed ahead.

Planning for the sake of planning is of no great value. It can be a means though of keeping a program viable and preventing the teacher from becoming complacent. It gives one a vision of things as they might be or as it is desired that they be.

(Continued, page 161)

Gordon Anderson, Chancellor of the California Delta Chapter of Alpha Zeta, welcomes Cal Poly's new vice-president, Dr. Robert Kramer, to the Agricultural Education Chapter as pledges and future teachers, Jerry Meyers and William Tella hold up the banner.

A Look at Some Who Quit Teaching

JOHN F. THOMPSON, Teacher Education, University of Wisconsin

Hughes (1956) has stated that a career is a "sort of running adjustment between man and the various facts of life and his professional world." Such a concept of a career with its 'running adjustment' suggests that a career is dynamic rather than static, that actions are sometimes inconspicuous rather than always being obvious, and that a career is continuous through time. This running adjustment is not ambiguous behavior, but is a series of intra-related actions which may be analyzed.

This study* was designed to discern those factors which contributed to the career development of a selected group of former vocational agriculture teachers who: graduated from Michigan State University in 1952, 1956, 1958, 1960 and 1961; who began to teach agriculture immediately after college graduation; who taught for one or more years; but who were not teaching in the fall of 1965. Longitudinal type career information was gathered in the following categories: (1) background and personal information, (2) career choice and educational history, (3) work values, and (4) employment history.

During the five selected years, Michigan State University graduated 206 persons qualified to teach vocational agriculture, 129 or 62 percent of which began to teach immediately. Forty seven (36 percent) of the 129 are still teaching and 11 (9 percent) were unaccounted for which resulted in 71 careers being analyzed.

Background and Personal Information

Approximately three-fourths of the respondents were born to rural parents while 24 percent were born to suburban or city parents. A general shift in residence occurred during the time span from birth to high school attendance, as 94 percent attended high school while living in a rural area. The mothers of the former agriculture teachers possessed a much higher degree of educational attainment than did the fathers. Forty percent of the mothers, but over 62 percent of the fathers possessed less than a high school education. Nearly all (86 percent) of the agriculture teachers came from families who engaged in blue collar work.

Career Choice and Educational History

Teaching was the first occupational choice for 57 percent of the former agriculture teachers. Only 24 percent had decided to definitely become a teacher by the time of high school graduation. The typical former agriculture teacher did not enter a teacher education program until the third year of college. The reasons that the respondents gave for choosing teaching as a profession were characterized as being for a *reward* that teaching offered to them or for a *demand* that it would make upon them (Mori, 1963). Six sources of the demand or reward were identified. Nearly all (92 percent) of the former agriculture teachers chose teaching for the *rewards* that it would offer them. The source of the rewards was interpersonal for 50 percent and physical for 17 percent of the former agriculture teachers. Eighty percent of the respondents started a Master's Degree program before the end of their first year of teaching, and 40 (56 percent) completed the program before they left teaching.

Work Values

The respondents were given ten statements which represented four different sets of job values (Mason, 1961). These sets of values were *self-expression* (use special talents and abilities, be creative and original), *people-oriented* (work with people, be helpful, exercise leadership), *extrinsic* (earn money, provide status and prestige, provide a secure future), and *other* values (provide adventure, be relative free of supervision). The former agriculture teachers were asked to what extent any job or career would have to satisfy each of the ten statements in order for it to be an ideal job requirement. Following this, they were asked if these ideal job requirements were met in teaching.

John F. Thompson

The former agriculture teachers were found to have high self-expression and people-oriented values, the extrinsic values were somewhat lower and the other values were very low. People-oriented values were rated highest for teaching, followed very closely by the self-expression values. There was some doubt on the part of the former agriculture teachers if their extrinsic values could be met in teaching, but there was no doubt that the other values could not be met in teaching.

Employment History

The complete set of career data on the former agriculture teachers is shown in Table I. Following these data horizontally, it can be seen that: (1) after teaching one year, 23 of the former agriculture teachers changed jobs, (2) the peak exit rate was after four years of teaching, (3) nearly all had left by the time they had obtained 6 years of teaching experience, and (4) 66 percent of the agriculture teachers had all of their experience in one school.

One may also check down the columns to see what happened to those who left teaching. For example, of the 23 who changed jobs after one year of teaching, only 14 had left teaching. Nine had simply changed to teach agriculture in another school. Four had entered a business or sales job, three had returned to college, etc.

Job mobility for this group was also limited. Figure 1 indicates that nearly all of the former agriculture teachers held three or less jobs (including teaching). The typical pattern was to retain the job that was taken as the person left teaching. No occupation attracted most of the respondents as they exited teaching. About equal numbers were attracted to school administration, business, and professional agriculture jobs. A much lower percent entered non-vocational classroom teaching as they left agricultural teaching.

(Continued, page 158)

*This was part of a larger study completed at Michigan State University to discern those factors which contributed to the career development of former vocational teachers. The research reported herein was performed pursuant to a contract with the U.S. Department of Health, Education and Welfare, Office of Education, under the provisions of the Cooperative Research Program.

TABLE 1

BASIC CAREER DATA ON FORMER VOCATIONAL AGRICULTURE TEACHERS

29 careers
42 careers
55 careers
61 careers
71 careers

Disposition	Began	Years After Starting to Teach 01	02	03	04	05	06	07	08	09	10	11	12	13
Began	71													
Teaching same school		48	30	20	12	4	3	3	2	2	2	2	0	0
Teaching different school		9	14	16	14	11	6	3	2	2	1	1	0	0
School administration		0	5	7	9	16	16	15	14	14	10	10	11	11
Business or sales		4	5	7	13	12	12	14	10	10	10	9	11	11
Professional		2	7	10	14	10	9	11	6	6	2	2	2	2
Farming		0	1	1	1	1	1	0	0	0	0	0	0	0
Self-employed		0	0	0	0	1	1	1	1	1	0	0	0	0
Service occupation		0	0	0	0	0	0	1	2	2	2	2	2	2
Higher education teaching		0	0	0	0	0	1	1	1	0	0	0	0	0
Higher education non/teaching		1	1	0	0	0	1	1	1	1	1	1	1	1
Back to college		3	3	4	4	2	1	0	0	0	0	0	0	0
Teaching non-vocational		0	0	2	2	2	3	4	4	4	1	2	2	2
Military		3	3	2	0	0	0	0	0	0	0	0	0	0
Illness		0	1	1	0	0	0	0	0	0	0	0	0	0
Church		0	0	0	1	0	0	0	0	0	0	0	0	0
Not ascertained		1	1	1	1	0	0	0	0	0	0	0	0	0

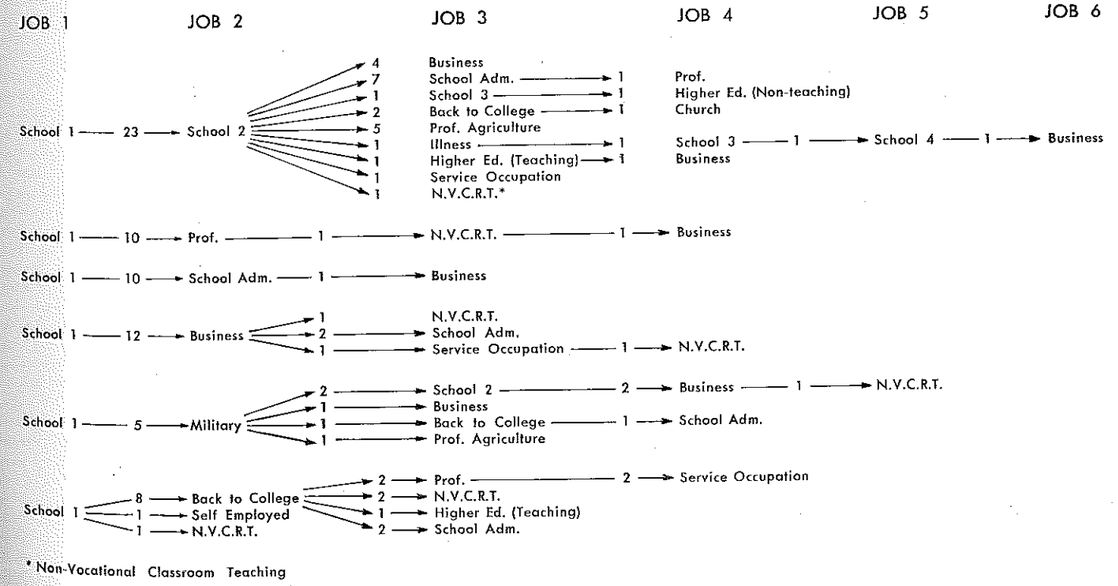

FIGURE 1 CAREERS OF 70 FORMER AGRICULTURE TEACHERS

A Look at Some Who Quit Teaching

(Continued from page 156)

The Miller-Form Career Pattern Paradigm (1949) is a research instrument used to describe career stability. It states that a career has three phases. These phases are initial, trial, and stable. The initial phase of the teacher's career was defined as a job taken for only one year immediately after college graduation, the trial phase for two years or any job taken after the initial stage, and the stable phase is entered when a job is held for three years. The various I-T-S combinations have been found to reveal 14 patterns. Seven of these have been characterized as secure and the other seven as insecure career patterns. Thus, a secure career is possessed by those persons who do not change jobs frequently.

Sixty-eight percent of the careers of former agriculture teachers were classified as reflecting a secure career pattern. The predominate secure pattern was type seven (T-S) which was held by 38 percent of the former agriculture teachers (while 23 percent held the type one pattern, which is characterized by one or more secure phases). Approximately three-fourths of the insecure career patterns were type twelve, which reflects a career that had entered a stable phase prior to its current trial phase (S-T).

Summary

Former agriculture teachers had very stable careers. They moved infrequently while teaching and were likely to have only one or two jobs after leaving the agriculture classroom. They came from rural, blue collar families which typically had a high school or less education. Most of the former agriculture teachers decided on teaching as a career only after they entered college. They were found to have high self-expression and people oriented values and teaching satisfied these values.

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The Rural Box

Most of the heads of poor rural families are able-bodied men. Some, especially the younger ones, can be trained and can move to jobs wherever available.

But those over 45 years of age—who comprise about half the family heads—have only limited potential for retraining and migration. These men, and their families, are frequently termed "boxed-in" rural residents.

On the basis of 1959 data, it was estimated that 2.8 million low-income rural family heads were boxed-in; 1.7 million were not. About 1.8 million of the first group were farm people.

In 1964 Congress passed the Economic Opportunity Act which provided grants up to $1,500 per family to help this group boost incomes. These grants can be used to (1) acquire or improve real estate or reduce mortgage indebtedness, (2) operate or improve the operation of a farm, (3) participate in cooperative associations, and (4) finance non-agricultural enterprises. Loans up to $2,500 per family are also available for financing nonfarm businesses.

The Farm Index.

BOOK REVIEWS

TROEH, FREDERICK and PALMER, ROBERT, *Introductory Soil Science*, The Iowa State University Press, Ames, Iowa, 1966. pp. 95, Price $2.50

The manual is intended for laboratory use in a college course in basic soil science. Contents covered gives the student a feeling of how much water a soil can hold, how much lime a soil may need, and how much soil loss can be considered tolerable as well as an understanding of variability in soils and of the pattern of occurrence of soils. Material on the chemistry, physics, and biology of soils, soil conservation, soil survey are also thoroughly covered.

Many helpful photographs, maps, and drawings, plus a handy supplemental reading list, should make this paperback a good reference to the student in a beginning soils course. The authors present their material in a manner which allows the student to master otherwise abstract topics such as soil profiles and horizons, soil texture and cation exchange capacity.

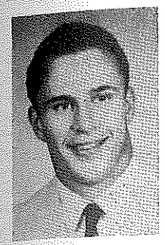
Mr. Frederick Troeh is an assistant professor of agronomy at Iowa State University; Mr. Robert G. Palmer is an extension agronomist at Oklahoma State University.

Guy E. Timmons
Michigan State University

DEVLIN, ROBERT M., "Plant Physiology." 430 Park Avenue, New York, New York 10022: Reinhold Publishing Corporation, 1966. Price: $11.00.

The authors indicate that this is a beginning text for college students in the field of plant physiology. As such, it should be a valuable reference book for post-high school students who are preparing for work in farm crops, greenhouse work, nursery work, or in horticulture, at the technician level. The book is organized in 22 chapters arranged in 7 parts as follows: Introduction, Water Relations, Carbohydrate Metabolism, Photosynthesis, Mineral Nutrition, Plant Growth Hormones, and Growth and Development. The text is well illustrated with sketches, graphs, and some charts. Each of the chapters contains a fairly extensive bibliography dealing with the content of the chapter in which it is included. Dr. Devlin is associated with the University of Massachusetts.

Raymond Clark
Michigan State University.



G. R. Matteson

Employment Experiences of Graduates From High School Vocational Educational Programs

G. R. MATTESON, Asst. Prof. Ag. Educ.,
State University, River Falls, Wisconsin
and
W. T. BJORAKER, Prof. of Ag. Educ.,
University of Wisconsin, Madison, Wisconsin *

W. T. Bjoraker

Do the post high school experiences of male graduates differ relative to the amount of high school vocational education received? If so, do these differences purport the value of the high school vocational educational programs?

Recently a study was conducted by the Department of Agricultural and Extension Education, University of Wisconsin, in an attempt to shed some light on these and similar questions.

Specific relationships were studied between the amount of high school vocational education (in this study high school vocational agriculture and industrial arts were considered as vocational education) received by the graduates and the nature of their (1) initial employment, (2) employment survival, (3) job advancement, and (4) job satisfaction.

The subjects for the study were the 1959-60 and 1960-61 male graduates of ten high schools in Northeastern Wisconsin who had not attended college for as much as two years and had not more than six months of active military service. Of a sample of 374, there were 310 respondents (83%). These graduates had lower than average scholastic ability and possessed lower than average Henmon-Nelson scores. On the average, they had completed four units of high school vocational education.

Findings

The occupations reported by the graduates were scored by the use of an occupational prestige scale developed by the National Opinion Research Center. On this scale, the upper fourth of the occupations scored above 75 and one-fourth scored below 55. Graduates who obtained initial post high school occupations of a higher prestige level than their father's employment were more frequently those who had received fewer than four units of vocational education. The fathers of this group were less likely to be farmers and usually were in occupations with higher prestige scores. Moreover, these graduates placed greater value on their commercial courses and less value on mathematics, industrial arts and vocational agriculture courses. Graduates who had completed three units or less of high school vocational education more frequently migrated from their home community than other graduates.

Employment Survival

In comparison to graduates who had more extensive vocational education, graduates who had completed one year or less of high school vocational education more frequently (1) had held only one full-time job since high school graduation, (2) were enrolled in formal educational courses, and (3) desired to enroll in a formal educational institution within the next five years.

Job Advancement

As was the case with their initial employment, graduates who had completed three units or less of high school vocational education generally had employment with higher prestige scores, and this employment was more likely to be dissimilar to their father's occupation than was the case with graduates who had completed four units or more. These graduates also had fathers who were employed in occupations with high prestige scores. Furthermore, the data revealed that graduates who had completed three units or less of high school vocational education (as compared to graduates who had completed four units or more) were more likely to report that summer employment while attending high school and out-of-school organizations had an influence on their present employment selection. They were more likely to feel that their high school mathematics, industrial arts, and English courses and their high school education as a whole, had less value in preparing them for their present employment. They did, however, believe that their high school commercial courses had more value in preparing them for their present employment than did the graduates who had completed four units or more of high school vocational education.

Job Satisfaction

Graduates who had completed one unit or less of high school vocational education (as compared to those graduates who completed two units or more) tended to feel (1) less secure in their present employment situation, (2) less satisfied with their promotional possibilities and the training programs of their present employment, and (3) less satisfied with the job as a whole. Noteworthy was the fact that graduates who had completed six units or more of high school vocational education tended to express greater dissatisfaction with their present salary and the duties and tasks which they were asked to perform in their present employment situation.

Concluding Remarks

Generally, the number of units of high school vocational education completed by the graduates had little influence on the graduates post high school employment experiences. This finding was explained, at least in part, by the fact that all but seven of the graduates had enrolled in some high school vocational education. Therefore, the comparison of the employment experiences of graduates who had not enrolled in any high school vocational education with those graduates who had enrolled provide results of limited value.

Accepting the premise that high school vocational educational programs are of value to an individual in his post high school employment experiences, it seems reasonable to assume that greater variation in post high school employment experiences would have been found if graduates who had not enrolled in any high school vocational education programs had been compared to graduates who had completed several units of high school vocational education.

* This report is based on a Ph.D. Dissertation conducted in cooperation with the Dept. of Agricultural and Extension Education and the Center for Studies in Vocational and Technical Education, University of Wisconsin.

THE BEGINNING TEACHER OF VOCATIONAL AGRICULTURE

Role concepts contrasted with successful experienced teachers [1]

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Much has been written and spoken about the need for quality educational programs. Modern buildings, fine equipment, exciting instructional tools and materials, imaginative and innovative programs do not guarantee its attainment. The need and the importance for understanding what constitutes a good teacher have long been axiomatic in teacher education. The need for successful beginning teachers coupled with the current short supply of teachers and the increased demands for more technical competence and more qualities of professional leadership, in the trainee, to get the job successfully performed, seems to magnify the teacher training problem to overwhelming proportions.

Role Perception Important

In spite of the diverse complexities of the problem and a need for a more knowledgeable "technical and professional man," one of the limiting factors of success for the beginning teacher of vocational agriculture may hinge upon his role perception for the teacher's position. "Especially cogent are the reports of situations in which the absence of the opportunities for learning to enact roles appropriate to defined positions leads to deviant conduct."[2] Furthermore, it seems logical to assume that if a beginning teacher holds a role perception greatly varying from that of the *successful experienced teacher* of vocational agriculture, for the teacher's position or any area or areas which the teacher performs, he will need additional assistance to compensate for this difference in role perception. If such a relationship is found to exist, the teacher training institution would be rendered fruitful data needed to deter from the beginning teachers "the traumatic experiences which cause many promising prospective teachers to withdraw from the profession after the first year."[3]

The study sought to mirror the beginning teachers' image of the vocational agriculture teacher's position in light of the previously identified successful experienced vocational agriculture teachers.[4] To facilitate the contrasting of role perceptions for the vocational agriculture teacher's position as viewed by successful and beginning teachers, a role perception instrument developed by McComas[5] including 77 role definition items for the following expected areas of performance in the total vocational agriculture program was utilized: (1) relationships with school and administration, (2) classroom teaching, (3) teaching farm mechanics, (4) developing farming programs, (5) advising the FFA, (6) young and adult farmer programs, (7) physical facilities, (8) public relations, (9) professional improvement, (10) administrator's role in the vocational agriculture program and (11) guidance and counseling. The scale used to rate the seventy-seven items included in the schedule in the eleven areas reflected role expectations felt for each item as follows: Definitely should–1, Should–2, May or may not–3, Should not–4, and definitely should not–5.

Beginning teachers and successful experienced teachers realized an overall significant agreement for the eleven areas or a rank-order correlation of .782 as indicated in Table 1. The data further indicate that the beginning teachers' role expectations for the following areas in particular were significantly similar to that of the successful experienced teachers: (1) relationships with school and administration, (2) young and adult farmer programs, (3) guidance and counseling, (4) developing farming programs, (5) teaching farm mechanics, and (6) classroom teaching.

TABLE 1

A COMPOSITE RANK CORRELATION BY AREA CONTRAST OF THE BEGINNING TEACHER AND EXPERIENCED TEACHER OF VOCATIONAL AGRICULTURE

Areas	Rank-Correlation Between Teacher Groups	Level of Significance
Guidance and counseling	.975	.05
Physical facilities	.970	N.S.[a]
Young and adult farmer programs	.929	.01
School and administrative relationships	.915	.01
Developing farming programs	.900	.05
Teaching farm mechanics	.723	.05
Advising the FFA	.655	N.S.[a]
Classroom teaching	.572	.05
The administrator's role	.556	N.S.[a]
Professional improvement	.386	N.S.[a]
Public relations	.314	N.S.[a]
Composite Correlation for all Areas	.782	.01

[a] Using the .05 level, no significant relationship was found between the teacher groups for the areas.

[1] Hollis Elbert Todd, "A Role Analysis of the Perceptions of the Beginning Vocational Agriculture Teachers and Their Professional Difficulties in Role Performances." (Unpublished Ph.D. dissertation, The Ohio State University, 1965).

[2] Theodore R. Sarbin, "Role Theory," Handbook of Social Psychology, ed. Gardner Lindzey (Reading, Massachusetts: Addison-Wesley Publishing Company, 1954), p. 227.

[3] Albert H. Shuster, Jr., "Supervision and the Non-Professionally Trained Teacher," *Educational Administration and Supervision*, 42 (May, 1956), p. 283.

[4] James D. McComas, "The Role of the Teacher of Vocational Agriculture as Perceived by Selected Ohio Teachers and Their Administrators" (Unpublished Ph.D. dissertation, The Ohio State University, 1962).

[5] *Ibid.*

[6] This discourse includes only a small segment of the study.

Conclusions and Implications of the Study [6]

The following conclusions and implications evolved from the study relative to the teacher of vocational agriculture and the pre-service and in-service training programs of the Department of Agricultural Education.

1. *Role perceptions of the beginning teachers studied were basically internalized for the teacher's position, that is, they entered the local vocational agriculture department with a reasonable degree of understanding of their role.*

The pre-service program for prospective teachers should continue to develop understanding of the vocational agriculture teacher's position through continuing the balance of activities and experiences with sufficient flexibility however, to adjust to emerging changes in the program.

The Department of Agricultural Education should continue to research and to evaluate the present program through staff studies and graduate research–to give direction to needed changes in the training program.

2. *Beginning teachers held role perceptions for the teacher's position very similar to the successful experienced teachers which further substantiates a degree of internalization for the teacher's role.*

Prospective teachers of vocational agriculture could be given further orientation and assistance during their field experience for those areas in which beginning teachers differed most from experienced teachers in role perceptions, i.e., public relations, professional improvement, the administrator's role in the vocational agriculture program and selection and use of physical facilities–while selected administrators could be involved to further orient the trainee on the administrator's role in the local vocational agriculture program. Cooperating teachers could share in this assistance, i.e., through provision of supplemental experiences for the trainee in these areas of needed emphasis.

Program Planning

(Continued from page 155)

A planned program serves as a guide for the teacher, a constant reminder of things to be done. It also serves as a basis for appraising the work. The school faculty, school administration and the general public can see what is included in the local educational program in vocational agriculture.

Action Must Be Planned Too

Devising a course of action through planning does much to insure the success of the instructional undertaking. It is a means of outlining the program so that it may be visualized in its entirety and so that measures may be taken to insure its fulfillment. Through this procedure it is possible to build an excellent thoroughfare between dreams and desires on the one hand and realizations. A course is charted outlining the objectives and the ways and means for reaching them.

Long range planning includes a variety of activities. It begins with an idea or desire on the part of the vocational teacher or a member of the school system or the community. Someone has to "spark" the idea. Once it has been decided to project the program, an evaluation should be made of the vocational activities and the needs of the community. Trends should not be overlooked. Then major purposes of the vocational program need to be set forth. Phases for implementation or the fulfilling of these objectives is the next step. It is essential that a means be devised for measuring progress toward the objectives.

The major problem is one of seeing the need, defining objectives and then making decisions based upon these goals. To keep current it is essential that planning be continuous with modifications in operations resulting when better ways are discerned for fulfilling the mission.

Attention should be given to the resources available–their potentials and limitations.

Projections of several years duration include much more than just devising a plan. There must be a continuous program of implementation and updating of the plans. This incorporates planning, evaluating, and replanning with modifications being made as dictated by the circumstances.

Steps to observe in program development include:

1. Determine the problems to attack
2. Secure the facts relating to a specific need
3. Organize and visualize the information
4. Identify possible solutions
5. Determine a logical course of action
6. Plan steps to be implemented
7. Implement the plans
8. Replan when the situation requires it

Cognizance of pitfalls and difficulties is basic to planning.

The current status of the program must be understood as it is the point of departure for any changes that may be projected. Then once the destination or goals have been formulated, it becomes a problem of bridging the gap between the current stiuation and what is desired.

Guides to effective committee work in planning are:

1. There is a mutual respect for each member of the group
2. Opinions of each member are sought and respected
3. Agenda for committee meetings is announced prior to the committee meeting
4. The committee meetings follow accepted methods of parliamentary law
5. Important matters are frequently studied by subcommittees prior to final action being taken by the council
6. The chairman for the council is open minded and fair in his actions
7. Subcommittees set up to investigate an issue are not bypassed
8. The actions of the council are accepted and supported by all members

Council meetings may be dynamic, lively and interesting or they may be dull, listless, dry and apparently at the point of death. The group makes the difference. The chairman and the executive committee (usually composed of the council officers) have the major responsibility of providing guidance and enthusiasm.

Summary

Teaching deserves and demands adequate preparation. Long-range planning is essential for best results from the educational program in vocational agriculture. It assures comprehensiveness to the work. This is a means of conserving time as well as filling each hour with more useful activity. Important elements can be pinpointed and hit-or-miss activities eliminated. It permits the individual or group to stand back and take a "long look" at the educational program. An overall perspective gives the group opportunity to visualize the place of the various phases of the vocational program in the total scheme of job preparation. The appropriate allotment of time and resources becomes more meaningful. There can be designed a proper balancing of activities.

Harold Binkley

PILOT PROGRAMS IN AGRICULTURAL OCCUPATIONS

—The design and some lessons learned in Kentucky for use in program development

HAROLD BINKLEY, Teacher Educator, University of Kentucky

W. C. MONTGOMERY, Assistant Director of Agricultural Education, Kentucky

W. C. Montgomery

Kentucky has had many capable students taking vocational agriculture who did not, for one reason or another, attempt to become established in farming. Likewise, there have been many farm boys who did not take vocational agriculture, who should have, because they, their parents, school people and others thought that the training would lead only to farming.

The people in vocational agriculture and the people in agricultural business in Kentucky have known for a long time that abilities in farming developed through training in vocational agriculture are definite assets to those who enter other agricultural occupations. In addition, there has been a very keenly felt need for training programs in agricultural occupations other than farming. Thus the joint staff in agricultural education felt the need for pilot programs to point the way for developing news programs under the 1963 Act.

General Design of the Pilot Programs

It was decided to limit the piloting to preparing 12th grade students of vocational agriculture for "job entry" in agricultural-supply businesses which sell seed, feeds, fertilizers and/or agricultural chemicals. If an agricultural business sold one or more of these supplies it could meet the merchandise requirements of a training station—the more it sold the better.

The instructional program dealt with class work followed by supervised practice in agricultural-supply businesses. The class instruction included these units: 1) *opportunities in agricultural occupations*, 2) *orientation to the training program*, 3) *agricultural mathematics*, 4) *human relations and personality traits*, 5) *store skills*, 6) *salesmanship and selling*, 7) *merchandising feeds*, 8) *merchandising seeds*, 9) *merchandising fertilizers*, 10) *organization of distributive businesses*, and 11) *merchandising agricultural chemicals*.

Two hundred hours of supervised practice was set up as the minimum for each student to secure during the school year.

Determining the Competencies Needed

Agricultural business concerns selling feeds, seeds, fertilizers, agricultural chemicals, and other agricultural supplies were visited and studied to determine the competencies needed. The managers or assistant managers were interviewed in terms of competencies needed by individual employees in the businesses. Three basic questions were asked regarding each kind of employee:

What does this man do in the business?

What would you like him to do better than he is now doing?

What would you like him to do, which he cannot now do?

As these questions were answered, notes were made of the jobs named and comments made. Leading questions were asked to get at certain areas of competencies that tended to be overlooked by the managers. A survey instrument was developed from the comprehensive list of competencies named by those interviewed. The instrument consisted of six major areas with the number of competencies in each area as follows:

Competency Area	Number of Competencies
Feeds	49
Fertilizers	49
Agricultural chemicals	48
Business	41
Seeds	38
General	25

In the areas of feeds, seeds, fertilizers, agricultural chemicals, and business, the competencies were broken down into: (1) *understandings*, (2) *knowledge*, and (3) *abilities*. The "general competencies" area dealt only with abilities. Each competency was evaluated by each interviewee as: "very helpful," "helpful," or "of little value."

Each staff member (supervisor and teacher educator) surveyed five agricultural businesses which sold (and/or rendered service in) feeds, seeds, fertilizers, or agricultural chemicals. A survey form was completed on each kind of employee in the business. Examples: 1) manager, 2) sales clerk, 3) field or farm representative, 4) service man, 5) bookkeeper, and 6) handyman.

Sixty-five agricultural supply businesses were surveyed. The survey had good state-wide coverage—each teacher educator surveyed in a different supervisory district coordinating his work with the supervisor of the district.

The sixty-five businesses employed 90 individuals—49 individuals needed competencies in feeds; 73 needed competencies in seeds; 70 needed competencies in fertilizers; 73 needed competencies in agricultural chemicals; 89 needed business competencies; and all 90 needed certain general competencies.

Student Evaluation of the Programs

Student evaluation of the programs ranged all the way from most helpful, interesting and challenging where the programs were good, to not thinking much of the program in cases where students were not placed for supervised practice or where students were given only menial tasks to perform.

Most students thought the course content was good; a few thought there was some undue repetition in seeds, feeds, fertilizers, and agricultural chemicals.

Favorable Comments by Students

1. This has been a very busy and a most rewarding year
2. Enjoyed this year much more than previous years
3. Learned more about what the future in agriculture holds for me
4. Gained valuable work experience
5. Of the three years of agriculture, I learned more and enjoyed this year the most
6. This year of agriculture I had to study more, but enjoyed it more
7. We now have a better chance to get a recommendation for a good job
8. Developed confidence in myself—I am a better boy
9. Helped me more than any other class I have taken in high school
10. Learned to deal with the public and how to talk to people
11. The unit on human relations and personality traits helped us to understand people better
12. Developed confidence in dealing with people
13. Developed sales ability
14. Learned to use equipment and machines in the store
15. Learned how to stock a store and how to sell

Unfavorable Comments by Students

1. There were times when I was needed at home and the program interfered with my parents' plans
2. Program is too short
3. No concern for student success on part of the teacher
4. A waste of my time because of the way it was taught
5. Did not get to do the job I thought I would
6. Had to get up early and the work was hard
7. One dollar an hour is not much pay for labor
8. Did not have time to study

Most of the unfavorable comments would not have emerged if there had been a good understanding developed of the purpose of the program and how it was to operate.

Cooperator Evaluation of the Programs

The majority of the cooperators were very pleased with the program. Only one of the fifteen cooperators felt that his trainees were not an asset to his business and worth what he paid them. Twelve of the cooperators rated their trainees "better than average" compared with other employees with similar backgrounds. Thirteen of the cooperators thought their trainees were excellent prospective employees.

Favorable Comments by Cooperators

1. Valuable experience getting to meet and handle people in a business atmosphere
2. Good instructor to work with
3. Instructor was very much interested in the boys
4. Program is very good
5. The whole program is strong

Unfavorable Comments by Cooperators

1. We had a considerable amount of damage from breakage
2. Work hours should have been better arranged
3. Boys need to be more confident and less afraid to meet the public
4. Penmanship very poor
5. Boys are too young and immature to put in responsible positions
6. Managers of agricultural businesses should participate in the class instruction at school

Most of these deficiencies can be corrected by teachers in their instructional programs—by placing emphasis on these matters in the class at school followed by supervision of the practice in the places of business.

Teacher Evaluation

The four pilot teachers thought the program of preparing students for "job entry" in agricultural-supply businesses was good. They felt a need for more time to prepare and develop lesson plans and instructional materials, to arrange for adequate training stations, and for supervising the practice of the students.

The pilot teachers were asked to rate the importance of working with school administrators, guidance counselors, agricultural business concerns, parents of prospective students, and prospective students. Their rating of the need for working with all groups named ranged from "important" to "very important."

Three out of four teachers thought it was "important" to "very important" to: 1) discuss the program with counselors, and 2) to keep counselors abreast of the program throughout the year.

All teachers thought it was "important" to "very important" to hold meetings of parents of students to secure an understanding of the program. They also thought it was "important" to work both with students and parents at home to further develop an understanding of the program.

The teachers felt that their advisory committees were "important" in: 1) securing an understanding of the program, 2) determining course content, 3) securing work stations, 4) establishing employer relations, 5) developing public relations, 6) securing interest of school administration in the program, 7) establishing working hours and duties of students.

The teachers felt it was "very important" to work with the employers both individually and in groups in developing the training stations. By "developing training stations" is meant securing a complete understanding of the program to include the kinds of supervised practice desirable for students to participate in, with increasing responsibility.

All teachers thought it was "very important" for the teacher to carefully prepare students for their interviews by working with them in class on how to dress, how to talk, how to handle themselves during an interview, and what to do in terms of follow-up. The teachers felt it was "important" for the teacher to arrange for acceptable training stations. All four teachers felt it was "very important" that cooperating employers should select, after interview, the students they want to work in their businesses.

Three of the four teachers felt that 200 to 300 hours of supervised practice was adequate to prepare students for "job entry" in agricultural-supply businesses. The teachers felt that a student should work from 20 to 40 hours in a business, to get oriented and acquainted with the job, before a "seasonal rush" started.

Of the 47 students enrolled in the pilot programs: 46 received supervised practice with 31 receiving adequate experience in the several jobs in the business (or department) in which they worked. Eight students performed routine or menial tasks most of the time. The teachers felt that on the average each student should, after getting oriented to his job, receive one hour of supervision for each 20 to 30 hours of supervised practice.

Teaching procedure differed with the teacher. A breakdown of teaching time, using different procedures was as follows:

Procedure	Teacher #1	#2	#3	#4
	Percent of Time			
Problem solving	75	60	60	20
Demonstrations	10	15	10	25
Resource people	5		10	5
Rehearsing	5	15	10	20
Role playing	5	10	10	30

Most of the units of instruction were rated good. In response to effect of program on other school work the range was: no noticeable change in 13 students, some improvement in 10 students, and marked improvement in 24 students. In response to question on effect of program on personality traits: one student showed no noticeable difference, 18 showed some improvement, and 28 showed marked improvement.

Developing Understanding a Must

Two chief concerns in starting new programs in agricultural occupations should be: 1) to set them up on a sound vocational basis, and 2) secure a good understanding of the program on the part of school administrators, other school people, men in agricultural business (the cooperators), the parents, and the students. A thorough understanding of the purpose of the program and how it is organized is a *must* if people are to cooperate and support the new program.

Some Events that Indicate Need for Understandings

One teacher made arrangements with a cooperator for a student to have an interview (unknown to the student). The teacher had the student go down and call on the man. The student went down, having forgotten the name of the man he was to see, asked a helper if they had a job. The helper said there was no job open—that there was not enough work to keep the present help

(Continued, page 164)

Pilot Programs

(Continued from page 163)

busy. The student came back to class the next day and said to the teacher, "There is no job at the store," so the teacher analyzes what happened and they start all over.

One student was placed in an excellent agricultural business. His parents bought an extra car so he would have transportation. When he got the car, he got a girl; when he got the girl, he felt obligated to take her off the school ground for lunch; this was against school policy; he got expelled; in order to get back in school he had to ride the bus to school; thus no way to get to work and he lost the job. When the teacher contacted the cooperating employer and asked if he could use a student the answer was, "I believe not." Thus, the loss of a good training station.

One Saturday in another store the assistant manager was in charge. He told a student to load a truck. The student said, "I won't do it, you didn't hire me." Thus, this training station was lost.

One teacher let three students enroll in his special class who had good farming programs and whose fathers were operators of large farms. He felt, the training would be good for them. As a result when things "got moving" on the farms the students were needed there, and this was also the same time the cooperators had really planned to make effective use of them. Thus a problem emerged and hurt the teacher's relationship with these cooperators.

Additional Things Learned

Cooperators desire to have the students do their supervised practice during the busy seasons of the year. For most part, agricultural businesses in Kentucky enjoy a busy season in the fall, again around Christmas, but the peak season is February through May. To place student for supervised practice when "business is moving" serves two mutually supporting purposes: 1) provides the cooperators with extra help when they need it, and 2) provides meaningful supervised practice when there is work to be done.

Many agricultural businesses who used one student the first year were willing to take two students during the busy season the following year, provided one student could work in the morning and another in the afternoon. One pilot teacher arranged for his class to meet from 11-12 each day. Thus, several students worked from 7 to 10:30 a.m. and were in school the rest of the day. Other students started to work at 12:30 each day, the agricultural and other classes had been met for the day.

Careful selection of students in March of the junior year, securing parent approval, determining the needs of the cooperating employers well ahead of time enables the teacher to help all students work out their class schedules in April or May of the coming year. It is important to meet the needs of the cooperators.

Publications Available

Center for Research and Leadership Development
in Vocational and Technical Education
Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

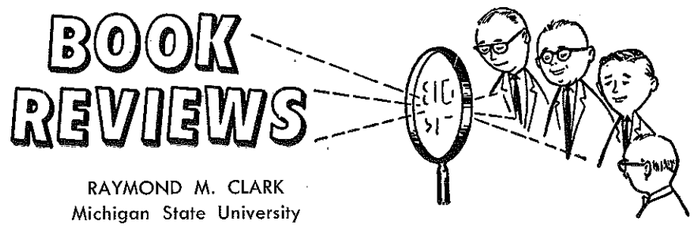
	Title or Description	Cost Per Unit
1.	Policy and Administrative Decisions in Introducing Vocational and Technical Education in Agriculture for Off-Farm Occupations (for boards and administrators of local schools, area schools, & colleges)	.75
2.	Vocational and Technical Education in Agriculture for Off-Farm Occupations (for counselors, teachers, board members, and administrators at all levels)	.75
3.	Summary of Research Findings in Off-Farm Agricultural Occupations	1.00
4.	Planning and Conducting Cooperative Occupational Experience in Off-Farm Agriculture	1.35
5.	Occupational Guidance for Off-Farm Agriculture (for guidance counselors and students)	.60
6.	Horticulture - Service Occupations (course outline and twelve modules)	7.25
7.	Agricultural Supply - Sales and Service Occupations (course outline and twelve modules)	7.00
8.	Agricultural Machinery - Service Occupations (course outline and sixteen modules)	7.50
9.	Agricultural Chemicals Technology (course outline and eight modules)	6.75
10.	Organizing to Provide Agricultural Education for Off-Farm Occupations (Of primary value to state staffs when working with groups planning programs in off-farm occupations. This consists of 18 mimeographed sheets from which transparencies can be made.)	.35

FISHER, W. B., editor, *A Dictionary of Natural Resources and Their Principal Uses*, 44-01 21st St., Long Island City, New York, 11101; Pergamon Press Inc., 1966, $2.50.

This paperback book is in the form of a dictionary with an alphabetized list of natural resource terms. In the case of the more important resources there is a description of the conditions of growth and climate. The authors state that "no natural resource in the world that is of any real commercial value has been omitted."

The book should be a valuable reference in vocational agricultural libraries.

Raymond M. Clark
Michigan State University



RAYMOND M. CLARK
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Walden, Howard T., NATIVE INHERITANCE: THE STORY OF CORN IN AMERICA, Harper & Row, Publishers, New York, 1966, pp. 199, $6.95

For anyone who entertains any doubt that corn is America's most important economic crop, this book will allay such doubt. The book should have a place in every FFA chapter library or vocational agriculture reference shelf. All persons who work with corn in any way would find it extremely enlightening and interesting.

The content traces the history and breeding of corn in America from its genesis, and elaborates in detail its food and non-food uses. Much attention is given to hybridization, processing of corn into starch and its derivatives as well as other food and industrial products, distilling, uses of cobs, and popcorn. A penetrating chapter dealing with a look into the future of corn's central position in the American food production scene concludes the book. It should be emphasized that this is not a publication dealing with the cultural practices of corn production, but rather a complete discourse on corn following its production.

Hilding W. Gadda
South Dakota State University

***Principles, Equipment, and Systems for Corn Harvesting*, William H. Johnson and Benson J. Lamp, published by Agricultural Consulting Associates, Inc., Box 330, Wooster, Ohio, 1966, price $9.95 pp. XIV + 370.**

This excellent reference book consists of thirteen chapters packed full of technical and usable information concerning Corn Harvesting Systems. It merits a place in every Vocational Agriculture department library for use by teachers and students where corn harvesting is done.

The book is well illustrated with pictures, figures, and tables. The content may be more suitable for teacher's reference and University personnel than general use as a classroom book for high school students of Vocational Agriculture. However, it should be a valuable reference for technician level training of Vocational Agriculture students in Area Vocational and Technical Schools.

Well documented research and personal experiences by the authors has been included in this book for all agriculturalists from the technical worker level to the scientific farmer.

Gilbert S. Guiler
Associate Professor
Agricultural Education Department
Ohio State University

EXPERIMENTAL HUSBANDRY FARMS, EXPERIMENTAL HORTICULTURE STATIONS, Sixth Progress Report, British Information Service, 845 Third Avenue, New York, 1965, pp. 69, $1.30

This is a bulletin-style publication containing results of recent agricultural production experiments at experimental husbandry farms and horticulture stations in Great Britain. About 45 pieces of practical experimental work are reported, 25 of which are in the horticultural field. Also included is research dealing with on-farm production agriculture, both crops and livestock. The content is abridged in a practical manner, necessitating a minimum amount of reading.

Mechanical harvesting of fruit, pruning trials, direct seeding of vegetables, and soil sterilant experimentation are typical examples of the work included, many of which have practical application to American agriculture. Teachers and students in vocational-technical horticulture programs would find this booklet relevant and helpful. The inspiration for much of the research is basically the same as that representing problems giving rise to much American agricultural research.

Hilding W. Gadda
South Dakota State University

MOORE, JOHN R. and WALSH, RICHARD G., *Market Structure of the Agricultural Industries*, Iowa State University Press, Ames, Iowa, 1966. pp. 412, Price $6.95

Presented in this book is a comprehensive and up-to-date view of the agricultural industries in relation to their diverse and evolving market conditions.

Market Structure of the Agricultural Industries looks penetratingly and incisively at the actions of the agricultural industries, measures their impact on the economy and questions whether existing federal controls are helping industry to maintain an equitable distribution of power acting in the larger public interest.

Fourteen experts have each contributed a chapter in which each has examined his sector in detail and with lucidity. The result is a many-faceted, illuminating book—and one certain to be widely read and discussed.

The fourteen chapters deal with: grain procurement, ice cream, apple processing, fertilizer, fluid milk, vegetable processing, baking, soybean processing, mixed feed, cotton, broiler chicken, meat packing, food retailing and farm machinery.

This book will be read with fascination by those concerned with economic questions.

Mr. Moore is Associate Professor of Agricultural Economics at the University of Maryland. Mr. Walsh is Associate Professor of Agricultural Economics at the University of Nebraska. These two men serve as co-editors of this book.

Guy E. Timmons
Michigan State University

THE NATIONAL FARM INSTITUTE, *What's Ahead for the Family Farm*, Iowa State University Press, Ames, Iowa, 1966. pp. 156, Price $3.50

Fourteen agribusiness leaders collaborated in the writing of *What's Ahead for the Family Farm*? These fourteen men represent a broad span of agricultural occupations, from dirt farmer to government official. They make varied and penetrating predictions about the family farm of tomorrow.

This book is an outgrowth of the 30th annual National Farm Institute held each year in Des Moines under the sponsorship of the Greater Des Moines Chamber of Commerce, the Iowa State University Center for Agricultural and Economic Development and other leading agricultural and business organizations and the farm press.

The varied styles of writing and viewpoints expressed by the writers makes for interesting reading. Students and others interested in the subject covered, should find this a highly informative prediction reference.

Guy E. Timmons
Michigan State University

BOOK REVIEWS

Business Procedures Used in the Agricultural Services, Ohio Vocational Agriculture Instructional Materials Service, 201 Agricultural Administration Bldg., 2120 Fyffe Road, Columbus, Ohio 43210, 1966, 175 pages, Instructional Manual-$2.50 Test and Answer Supplement-$1.00

Business Procedures Used in Agricultural Services is a manual prepared by Mr. Harry Plank, Ohio Teacher of Agriculture and former manager of a feed and grain business. The manual is designed for students interested in agricultural business supporting production agriculture, as well as for students planning to return to production units.

The Chapter headings include:

a. Maintaining and Inventory of Merchandise
b. Determining the Selling Price of Merchandise
c. Monthly statements and Service charges

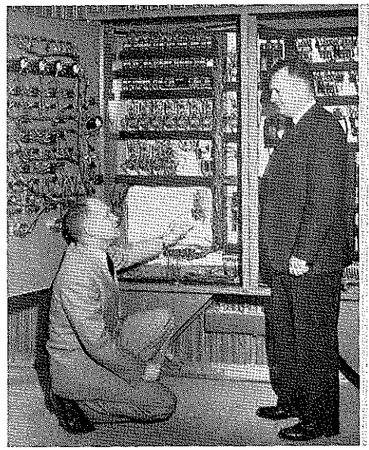
The manual is based on accounting principles and systems common to the feed and grain business and is a workbook type format with a separate test and answer supplement. It is well written and shows the touch of one who has been actively engaged in providing services for production agriculture. It is not a self-contained unit but is intended to supplement a semester or full-year course in Agri-business.

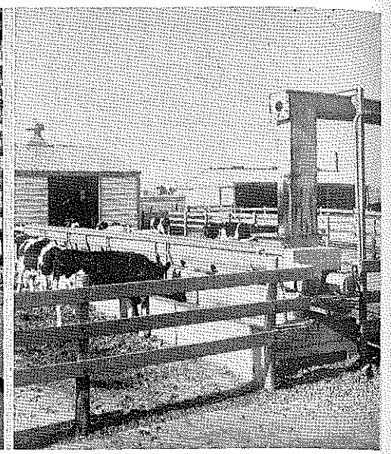
James Hannemann
Michigan State University

EDLIN, HERBERT L., "Know Your Conifers." New York, 845 Third Avenue, 10022: British Information Service, 1965. Pages 56. Paper Cover. Price: $1.00.

This publication by the British Forestry Commission is an 8 1/2 by 11 size publication dealing with identification of coniferous trees. The booklet is very well illustrated with drawings and photographs, together with a brief description of each species of tree, showing its growth characteristics and major uses. While this is a British publication, all of the trees illustrated may be found in some location in the United States.

Raymond M. Clark
Michigan State University.





Heart of the automated feeding system developed by the University of Illinois is a control panel, made by the General Electric's General Purpose Control Department, Dr. E. F. Olver (at left), of the university's Agricultural Engineering Department, and Dr. K. E. Harshbarger of the Dairy Science Department discuss operation of the system which may revolutionize dairy cattle feeding.

Specially designed for this application, the GE control panel combines circuit design and device selection and arrangement into one coordinated unit. The panel includes nine magnetic motor starters, 33 relays, 19 selector switches, eight potentiometers and two pushbuttons, as well as SCR's, current transformers, timers, circuit breakers, ammeters and numerous diodes, capacitors and resistors.

At right, the conveying auger coming from the feed processing center can be seen leading into a feed bunk. A 40 by 60-foot free stall shed is located in the far background.

Themes for the Agricultural Education Magazine

April-June, 1967

April — RESEARCH EMPHASIS

Progress report on emphasis on research as a 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.

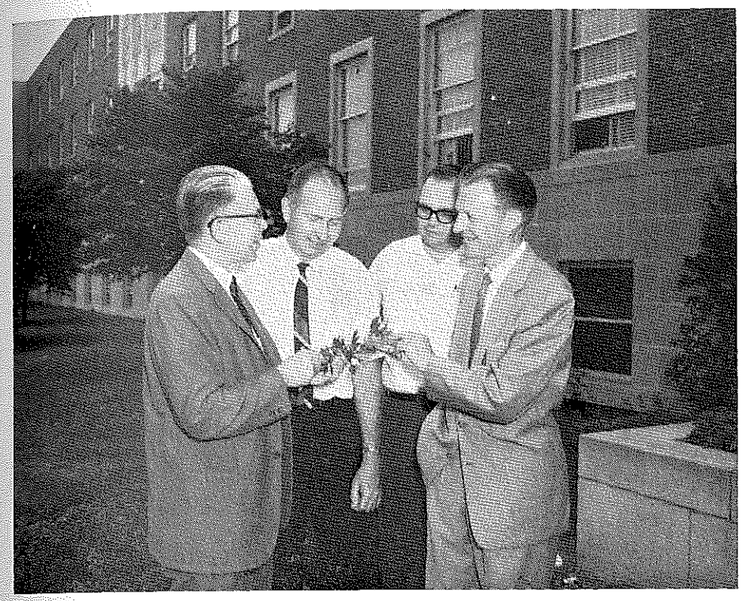
May — THE FFA — FOR 1928 or 1968?

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.

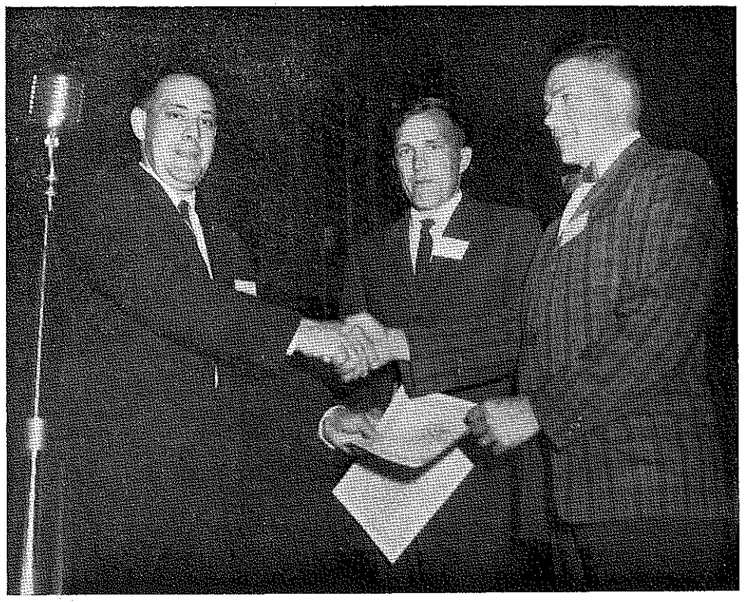
June — INNOVATIONS IN SUPERVISION

Major changes in supervision at the state and district level. How has role of supervisor changed? Relationship to administrators and teachers. Communications problems and procedures.

Send your copy to one of the Special Editors or directly to the Editor three months in advance. THANKS! — CCS.



Authorities from the United States and Canada were participants in a workshop on a teaching of vocational horticulture held at Ohio State University, June 15 to July 5. Left to right, Dr. Ralph J. Woodin, Department of Agricultural Education, Director of the workshop; Carl Totemier, Jr., of the DuPage School of Horticulture, Chicago; William Ruth, Mentor High School; and C. H. Henning, Director of the School of Horticulture at Niagara Falls, Ontario.



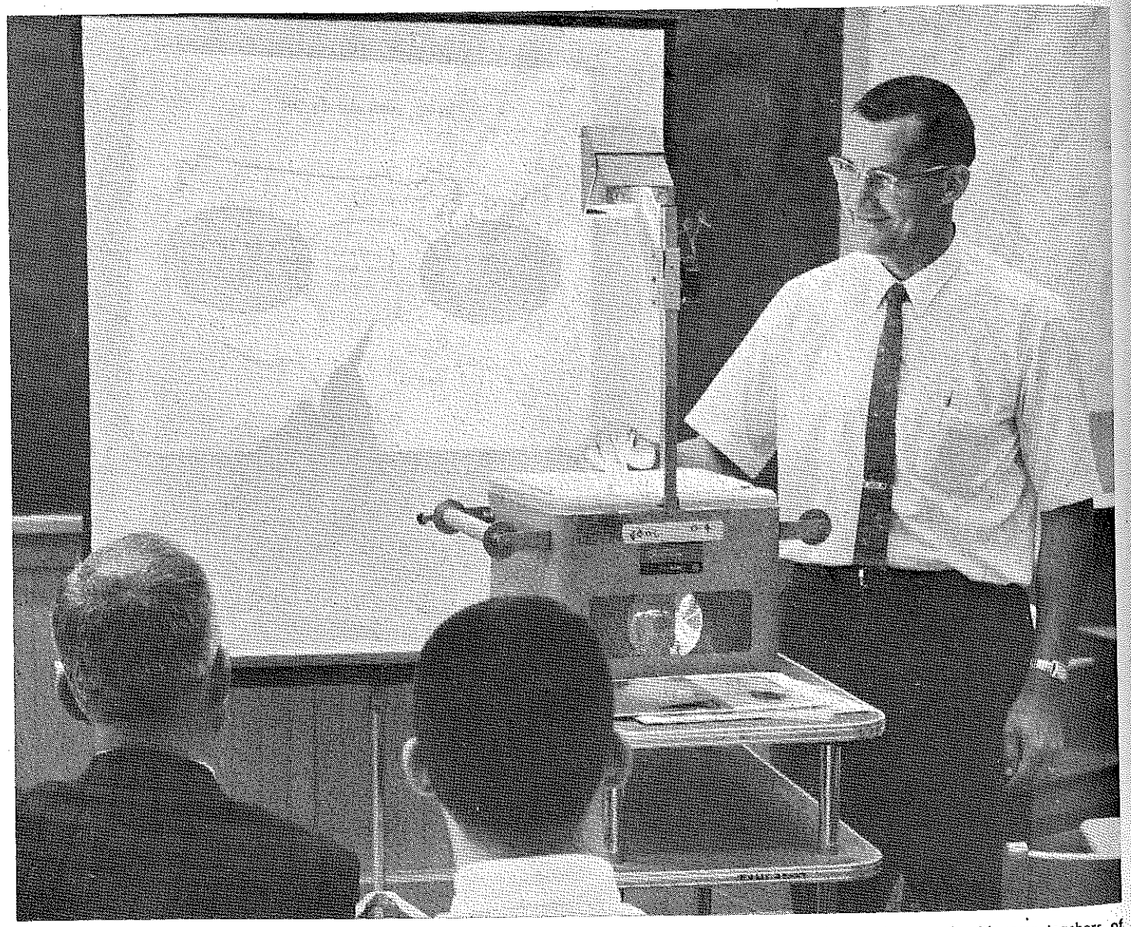
Donald Haight (left) presents 10 year certificate to John Elderkin while Daniel Bassett holds his certificate at center. Presentation was made at the Annual Professional Improvement Conference and Meeting of the Association of Teachers of Agriculture of New York. Photo by W. W. Sharpe, New York

Stories in Pictures

GILBERT S. GUITER
Ohio State University

(More pictures pages 166-67)

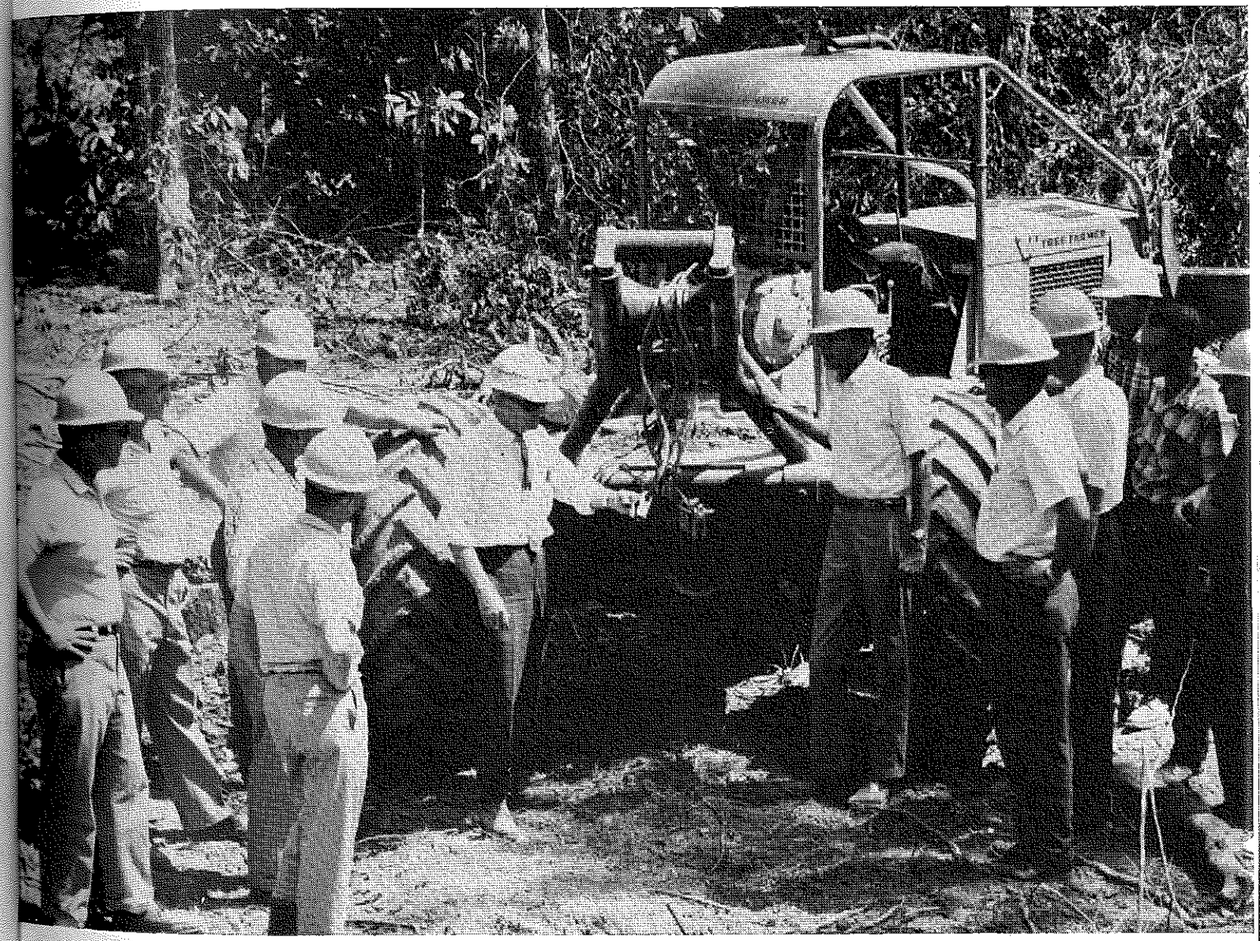
Nebraska Vo-Ag Teachers watching a demonstration of the Eutoloy Process during an In-Service Training Program.



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

Volume 39 February, 1967 Number 8

Agricultural . . . . . Education



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

Featuring RESPONDING TO CHANGING NEEDS

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