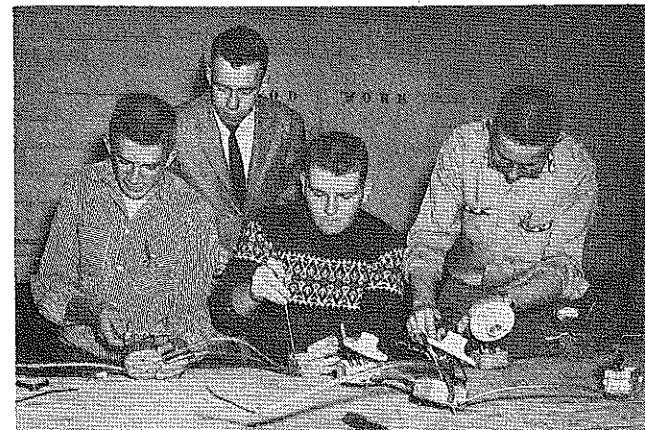
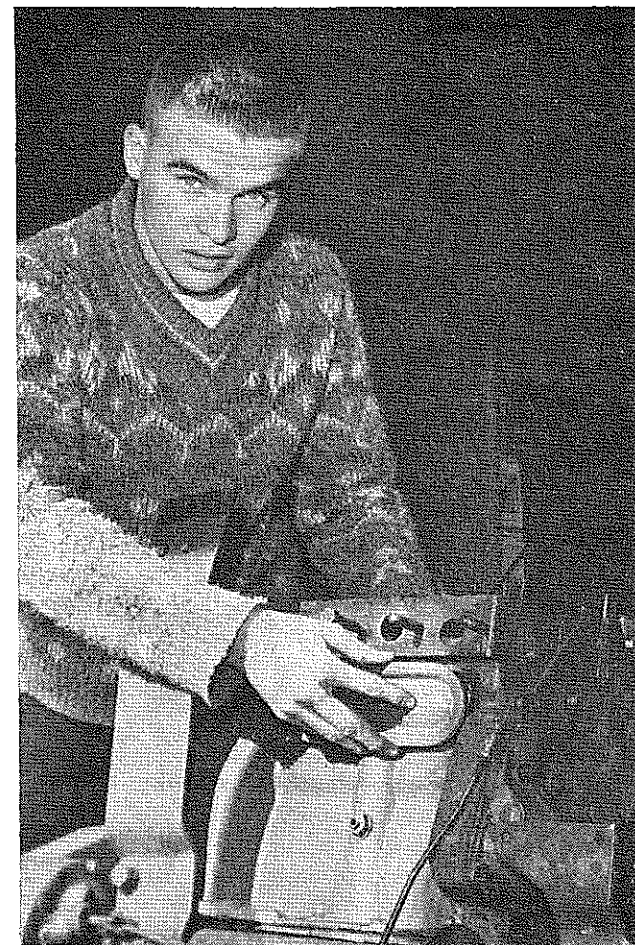


Haxtun, Colorado school superintendent, Buford Plammons assists in frying "Rocky Mountain Oysters," for a Vo-Ag Dad's night hosted by the local Board of Education (Photo by Irving Cross)



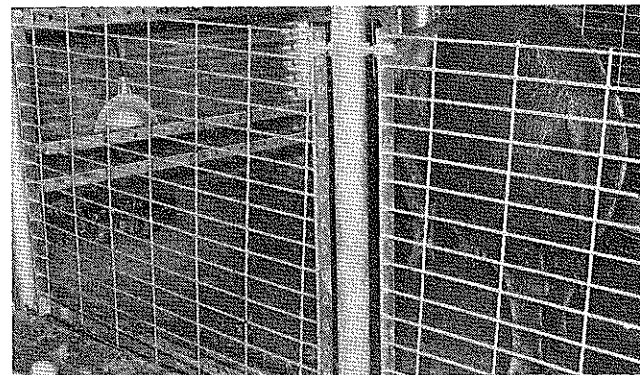
Skills in electrical wiring are taught in the agriculture shop under the supervision of the teacher. (Photo by Paul Hemp)



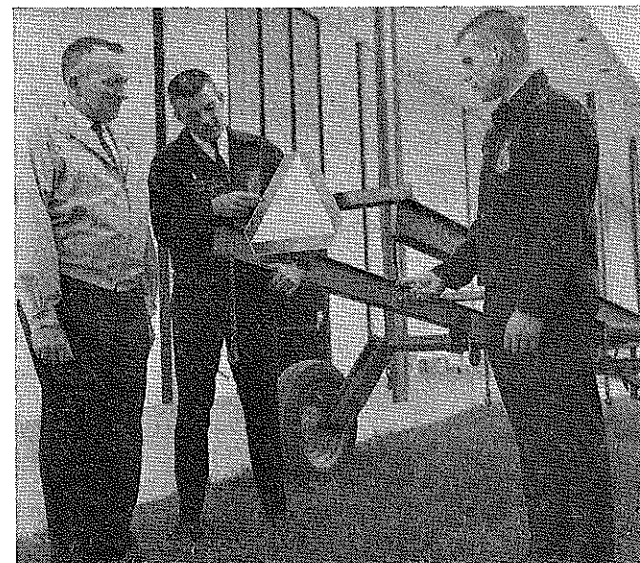
Joel Kritzman demonstrating skills and abilities acquired in the vocational agriculture mechanics shop in Iowa. (Photo by Manson)

Stories in Pictures

Gilbert S. Guiler
Ohio State University



The best of living conditions are provided for sow and litters by vocational agricultural students in Missouri. Hot water, heated concrete floor, infra red lamp and guard rails provide protection to newborn pigs.



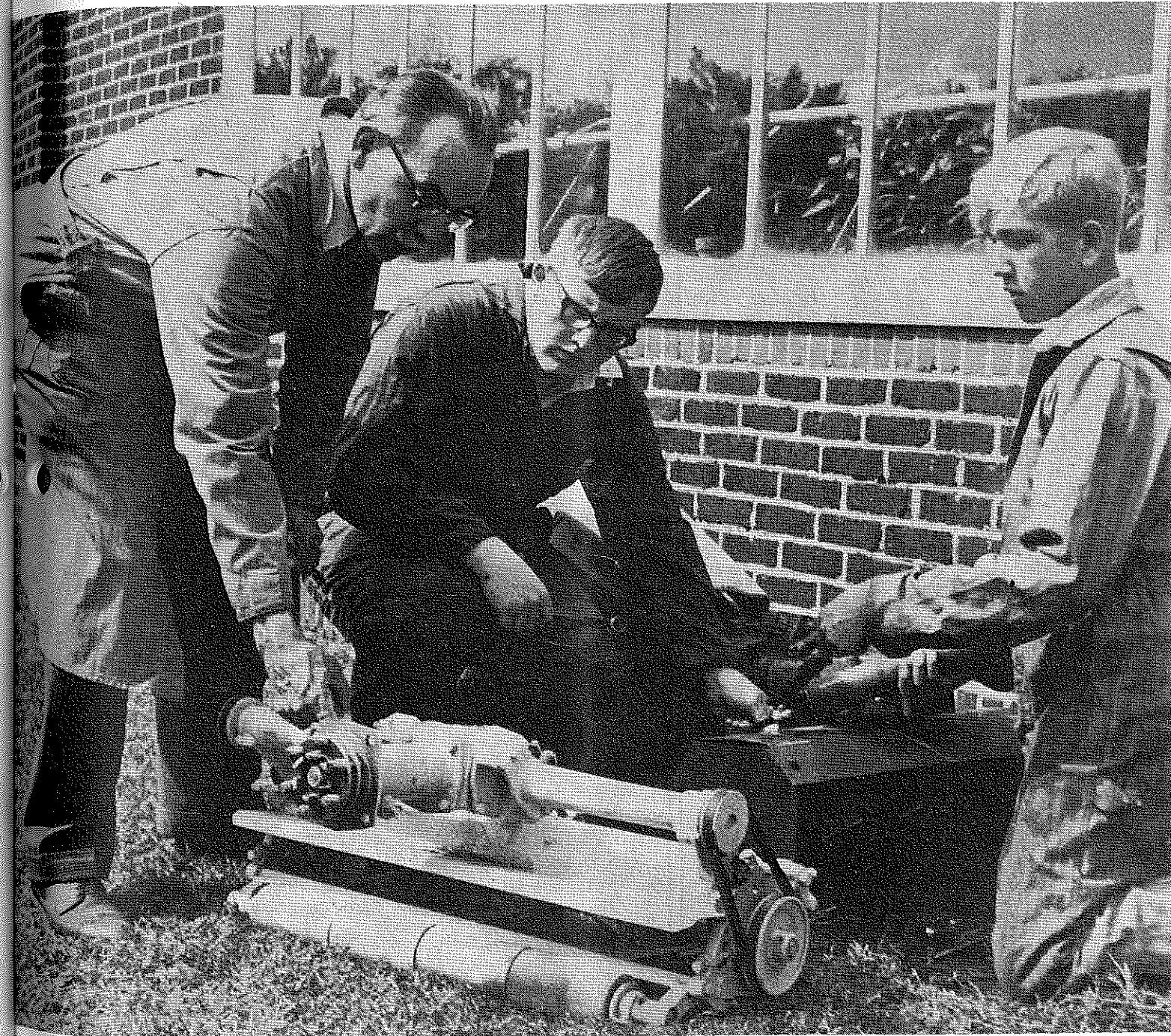
Guy Green, Route 1, Marysville, is pictured with his rotary hoe transporter that he made in Vocational Agriculture Mechanics. Shown on the rear of the vehicle is the "Safety Reflector Emblem" required on all farm equipment when being transported on Ohio highways at night.

AGRICULTURAL Education

Volume 38

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Number 7



Robert Peterson and Bruce Frederickson, seniors at Minneapolis Roosevelt High School, receiving instructions in use of landscape equipment, recently purchased for use in the horticulture work experience program initiated by the Minneapolis schools this year. In the background is a part of the greenhouse that serves as a laboratory facility for instruction in the horticulture program conducted by Mr. Luke.

Featuring
Work Experience Programs

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Editorials

Work Experience For What?

Again, we are faced with the problem of making effective use of an old idea in a new setting. One of the oldest recognized ways of learning has been "work experience." This approach to learning preceded formal schooling, as we now know it, by thousands of years. Even in the early days of this country, very recent in terms of time span, apprenticeship was a major means of education.

The idea of "doing" as part of the learning experience has been closely associated with the development of vocational education. So much so until the term "learn to do by doing" became a slogan for vocational education. In addition to shops, and other types of laboratory experiences, the idea developed that this "doing" would be even better if it occurred in "a real life situation." So, the supervised practice in vocational agriculture became the supervised farming program on the home farm. In later years Distributive Education programs included a similar idea in placing the student in an on-going business for this real-life experience.

For these and other reasons, then, it was suggested at the beginning of this editorial that renewed interest in Work Experience as a part of the learning experience is making use of an old idea in a new setting. However, in studying reports and hearing discussions of Work Experience Programs, there seems to be a lack of common understanding of the basic purpose of these programs. Some see these programs only for the boys who do not live on a farm. Others see these programs as replacing supervised farming. Still others see work experience as essential for all those enrolled in vocational programs. Although it is not necessary that everyone view work experience in exactly the same way it would seem to be helpful if we could agree on some basic purposes sought for an educational program involving work experience.

First, any program including work experience should see at least one major purpose to be that of *exploration* for the individual. That is, in the sense that the person see the work experience as an opportunity to *see himself* in relation to this experience. If this is a fruitful experience in this manner, the person must be helped to understand himself in three different situations in relation to this experience. That is, (1) *Prior* to the experience. How do I feel about this experience I am about to have? (2) *During* the experience. Now how do I feel about this experience? Better than I thought? Not so good? About the same? And (3) *After* the experience. Now, how do I feel about this experience? The same as before? In what ways do I see things differently since having this experience? This feeling and attitude of *exploration*, then, should be built into any work experience program in any area of study. It should be clearly understood that an experience may not be, and frequently is not, exploratory, but may simply be an act with little educational meaning.

When we are considering the place of work experience in *vocational* education programs, there are some additional guidelines needed. In other words, what makes an exploratory experience *vocational*? Although this is a difficult question to answer, we can reach some conclusions based upon research in this area. Two kinds of activities are considered when speaking of vocational exploration. As indicated earlier in this discussion, there is the matter of exploration of work in a real-life situation by working in this situation as a regular employee, or as nearly so as possible. The other type of activities would be those not directly job-oriented, but are thought to have relevance to vocational development. It is the latter type of activities that make it difficult for us to defend some of the exploratory activities seen in some vocational programs. The matter of reimbursement

(Continued on next page)



Cayce Scarborough

Theory and Practice

Have you done much reading in the Self-Concept Theory? If not, I believe that this is a *must* if we are to develop new insights into making Work Experience Programs, or any other educational experiences for that matter, most meaningful to the individual. The theory helps us see that views of self cannot be separated from views of life work. Certainly you can't go far talking about career development without considering self-concept. Many sources for further study can be found readily. However, one that may not be in your library which has much to say to us in vocational education is *Career Development: Self-Concept Theory*. Essays in Vocational Development. This can be bought for \$2.50 per copy from College Entrance Board, Box 592, Princeton, New Jersey 08540, or Box 1025, Berkeley, California 94701.

Several have suggested that Dr. Hamlin's definitions (1966 Models) for Occupational Education and Vocational Education, carried in this column in August, needed further clarification. But no one has sent in a better, or different definition. How about these?

Occupational Education: education *designed* to contribute to choice, competence, or advancement in an occupation or cluster of occupations.

Vocational Education: education *designed* to contribute *directly* to the *acquisition* of understandings, skills, or attitudes, considered to be necessary for choice, competence or advancement in occupation or cluster of occupations.

(Continued on next page)

Theory and Practice

(Continued from page 147)

These are not original with me, but are the result of much discussion with colleagues and graduate students. Your ideas and reactions are welcome.

Two farmers farm side by side. They put in the same number of hours in the field. One makes a third to half again as much income as the other. What makes the difference? Management—and a willingness to keep up with innovations in technology.
—*The Farm Index*, September, 1965.

Congratulations to Don Kramer, Vo Ag Teacher, Jasonville, Illinois. A long, highly complimentary feature article on Don's work was in *SCOPE*, the colorful magazine from V-C Chemical Company. If you have not seen the Fall Edition (with beautiful Florida scenery on the cover) you will want to read the article about Don. Again, doing something a little differently seems to get unusually fine results. Don has changed Vo Ag, but in an unusual direction!

While we are thinking about Work Experience in our programs, we may need to re-examine our long-time emphasis upon past experience. In these rapidly changing times, an old experience may be worse than none at all in meeting an entirely new situation. For example, my experience in building and using lamp brooders some years ago, would not help me if I went into the broiler business today.

In relation to the question of real value of certain past experiences, it was pointed out in a business magazine, that one of the most difficult things for business management to do is to discard or drastically revise a plan that has been successful. "Nothing succeeds like success." Yet, business men have learned that you must know when you stop succeeding before you go broke! Any implications here for us?

HAPPY NEW YEAR!

Work Experience for What?

(Continued from page 147)

has at times hinged upon this division of activities. The point here is that to be vocational, *an exploratory experience must have the purpose for the student of helping him answer some questions about choosing, entering, adjusting to, or progressing in an occupation.* In short, it is not the fact that the work experience takes place at an agricultural business, but the *purpose for which it is undertaken* that makes it vocational for the person. It must answer, for this person, one or more questions indicated above.

I am indebted to Jean Pierre Jordan, Teacher's College, Columbia University, for the basic ideas given above. I take the responsibility for my interpretation of them. It appears to me that they have strong implications for Work Experience Programs in vocational agriculture. If so, they can serve as guidelines for teachers in planning with students for making these programs of most educational value. Certainly, there would be much joint planning by student and teacher from the very beginning. Clear understanding of educational purposes. Learning would take clear precedence over earning at this point. Work experience would be closely related to class study. Overriding all other purposes for any Work Experience Program would be the question for each student to ask himself and keep before him prior to, during, and after the experience: *What does this experience say to me and my occupation in life?*

— Cayce Scarborough

Letters to the Editor

Dear Cayce:

I am sending you under separate cover the various materials that we have developed in our pilot programs—training for agricultural occupations other than farming.

Regarding comments and evaluation of problems seen in our program at this time, I am convinced that we need to expand our program in agricultural education. However, I think one of the difficulties in expansion is that in the haste to expand, we may neglect the fundamentals, that of supervised practice.

When it comes to cooperative programs in training young men for agricultural occupations other than farming, it seems that we have a lot to learn in developing cooperative work experience agreements. The majority of people that have been cooperating with us in the pilot programs at first appeared to be enthusiastic, but on later contact this enthusiasm had cooled off a little. However, as programs got under way and teachers began to place boys for supervised work experience, they developed MEMORANDUMS OF UNDERSTANDING which made clear the responsibilities of the student, the parents, the teacher and the employer, in the order named.

A third problem is the preparation of teaching materials which includes course outlines and student references for new programs. Unless new programs are supported by these, I am afraid they will not be very productive in terms of what we would like the end product to be.

Sincerely yours,
Harold R. Binkley

Thanks, Harold. Again, Kentucky moves ahead!

Dear Dr. Scarborough:

I regret that it is necessary for me to submit my resignation as Special Editor for the Agricultural Education Magazine. I terminated my employment with Vocational Agriculture in West Virginia on July 1. I was appointed Supervisor of Vocational Program Services for the total Division of Vocational Education.

I will continue to give my support to Agricultural Education and to the Agricultural Education Magazine in the years ahead.

Sincerely,
Joseph K. Bailey
West Virginia

Editor's Note: Please hang on Joe, even with your other responsibilities, for a few months, will you? THANKS.

Dear Dr. Scarborough:

Enclosed is an article for the AGRICULTURAL EDUCATION MAGAZINE. Mr. Baker puts into writing an expression of what I hear reflected more and more frequently in my contacts across the state. Coming from a teacher, perhaps it will help others make changes and, in Mr. Baker's words, "get the show on the road."

Sincerely yours,
Howard P. Addison
University of Maryland

Thanks Howard, we are using Baker's

Guest Editorial—

Some Further Questions
For our Consideration

"They who till the soil," President Jefferson said, "are the chosen people of God," and millions took that statement at face value. The perfect democratic state in which every man was something of an island—a farmer, self-sufficient in every way—has proven itself to be another of those splendid illusions for which man seems peculiarly adept.

No group is more Calvinistic than that which asserts the dignity of those who till the soil. They view farmers as "Lords" of the land, god-like in a real creative sense. The German philosopher Nietzsche has said somewhere "the best and most liked person still today is a healthy farmer, rude, cunning, stiff-necked, enduring: that is today the fashionable type." While Nietzsche has his proponents and opponents we retain even yet the central nucleus of this expression. Strong, creative, tough, persistent extroverts are all the fashion.

Carefully, man must reconcile his best view of man with his best view of food and fiber producers. And a rude, stiff-necked extrovert is no answer!

Recently Robert E. Taylor of the National Center for Advanced Study went directly to one of our most serious faults. He asked at the 1963 Seminar "... are we leaders or followers? Are we determiners of changes or merely recorders of change? It would seem that the time for re-assertion and re-emphasis of the possibilities inherent in effective internal leadership is at hand." There is no shepherd over the Ag. Ed. flock. But education generally suffers from that problem.

Too often, however, the leadership fails to be this open in its self-examination. After a brilliant discussion before the Seminar, Mr. Allen Lee, Oregon State Department of Education, went (unwittingly?) to the heart of the matter when he said, "It is interesting to note that we, who are leaders in vocational agriculture, have gotten together, have discussed this situation [basically the article by Edward T. Chase, *Harpers Magazine*, April, 1963] and have been able to reach agreement among ourselves to the effect that Mr. Chase and our other critics are out of step and misunderstand the true facts." (Italics are mine.)

We do much in the area of community relations, particularly the soft-shoe variety, but have little or no scholarly relations. We get together among ourselves. This thing which has stung us is not so much the public image as it is the image presented to the scholarly and academic interests. Our action here has been to cast the perjorative "ivory tower logic" at them. I challenge men like Werner Stegemann, who use that combination of terms, to distinguish between the so-called ivory tower logic and other kinds of logic. Casting derogatory terms at academic men is the last thing we can afford. Franklin, Locke and Bacon, all philosophers and intellectuals, created our field, but today scholars like what they see us doing far less than farmers and mechanics like what they see.

An arm of agricultural education should demand better relations with starving countries, should press for laws to promote further industrialization of agriculture here as well as in the so-called "backward" countries, should bring to the FFA the challenge of hungry billions and insoluble political problems, and should sound the ringing cry to the most able men of the world that politicians, good as they may be, can not solve the fundamental problems of the mass of mankind until they are all fed and clothed. We do this by giving people power to produce and power to live decently. The sages say knowledge is power. And knowledge is our business.

—Thomas K. Shotwell
Teacher of Vocational Agriculture
Charleston, Missouri

NEWS and VIEWS

Anthony Mumphrey has been appointed Dean of Louisiana State University at Eunice. LSU-E is a newly established Year Commuters' College designed to provide instruction at the Freshman and Sophomore levels in the curricula offered on the Main LSU Campus. The College will have three basic divisions, namely; Business Administration, Sciences, and Liberal Arts.

Mumphrey is a native of Louisiana. He served as Teacher of Vocational Agriculture and later as principal. He conducted the first phase of the Young Farmer Study Louisiana State University.

He earned his B.S., M.S., and Ph.D. degrees from Louisiana State University, and in 1963, joined the Department of Vocational Agricultural Education as Associate Professor.

James C. Atherton, also a native of Louisiana, replaced Dr. Mumphrey at LSU, where he has major responsibility for the graduate program. Dr. Atherton has been professor of agricultural education at University of Arkansas since completing his doctorate at University of Illinois.

Edwin L. Love replaced Atherton at the University of Arkansas. The teacher educator, a native of Missouri, earned his B.S. degree at Mississippi State University. He has taught vocational agriculture in Arkansas and Mississippi. While completing his graduate study at Pennsylvania State University, he served as graduate assistant and helped prepare publications as well.

David C. Craig has been appointed Lecturer in Agricultural Education at Cornell University. He has recently completed course work and residence requirements for the Doctorate at Cornell. Previous to enrolling in graduate work, he was a teacher of agriculture in Wisconsin. Mr. Craig will devote most of his time to teacher training activities at the undergraduate level.

Some Criteria for Work Experience

DAVID G. CRAIG, Teacher Education, Cornell University

A common assertion among vocational educators is that vocational education should be designed to provide opportunity for all individuals to participate in learning activities concerning some occupation in which they are interested. Most of the readers are familiar with the legal definitions of vocational education as found in the National Vocational Education Acts of 1917 and 1963. These definitions indicate that vocational education is designed to fit individuals for gainful employment.

Thus Work Experience possesses a most intimate relationship with the concept and over-all aim of vocational education. Work experience is a necessary condition for individuals to learn skills, knowledge, and attitudes for making a beginning and advance in an occupation. If Work Experience is so critical, what then should be the criteria for Work Experience Programs? An analysis of these terms, Work, Experience, and Work Experience, should provide some suggestions.

What is Work?

The first step in analyzing the work experience concept is the development of some conceptions of work. Webster¹ provides some definitions of the meaning of work. Work is the activity in which one exerts strength or faculties to do or perform:

1. sustained physical or mental effort valued as it overcomes obstacles and achieves an object or result;
2. the labor, task, duty, that affords one his accustomed means of livelihood;
3. strenuous activity marked by the presence of difficulty and exertion and absence of pleasure;

¹Philip B. Gove (ed.), *Webster's Third New International Dictionary* (Springfield, Mass.: G. & M. Merriam Company, 1961), p. 800.

4. occasional or temporal activity toward a desired end;
5. a specific task, duty, function, or assignment often being a part or phase of some larger activity.

From these statements, it is evident that work is a mental, as well as physical activity, it is goal directed and it takes place in a life context with other activities.

Another approach to the conception of work may be taken from 'work as a value' point of view. Being committed to an occupation, having a job, being busy a number of hours each day are work activities which have high value in our American society. In the past work was considered as an end in itself. For the individual involved it had a high degree of interest, it provided social recognition, and it related closely to the individual's ethical life.

Today work is considered more as a means to an end. Although work retains some of its earlier connotations, it now is more of a means to status in a social structure, to personal achievement, and success.

What is Experience?

Experience may be defined in a number of ways. In each way there is evident some common and yet different ideas. Webster² gives several meanings, as follows:

1. the direct observation of or participation in events or an encountering, undergoing, or living through things in general as they take place in the course of time;
2. the state, extent, duration, or result of being engaged in a particular activity or in affairs generally;
3. the knowledge, skill, or practice derived from direct observation of a participation in events;
4. the act or process of perceiving or apprehending.

From these statements it is apparent that whoever is having or going to have an experience must be directly involved, i.e., participate in undergoing, doing. Experience is specific to an activity or event. It is also apparent that involvement in an activity results in something. Finally, there is the indication that such a phenomenon is an entity in time.

From Dewey it is evident that experience is a matter of the interaction of an organism with its environment, and an environment that is human as well as physical, that includes the materials of tradition and institutions as well as local surroundings. More specifically he believes that experience consists of interactions that are continuous in the life of individuals and in the social groups to which they belong. Thus interactivity and continuity constitute the basic features or dimensions of experience.

Although interactivity may be considered broadly, as interaction among things, only the higher human interactions are considered to be experiences or aspects of experience. There are two kinds of phenomena between which an interaction might take place. On one hand is the subject, i.e., the mind, the self, or some human personality, on the other is the object, i.e., physical, mental (ideas recalled), concrete objects, or things in the physical environment.

A second basic feature of experience is that of continuity. It is believed that the self, the mind, the personality of each and every one of us is a stream of experience. Furthermore, within this stream there are high points, each with a beginning, a development, and an ending. It is believed that the individual is aware of these high points and that they are somehow related one to another.

The continuity of experience is apparent as each experience results in some kind of behavioral change. Every experience modifies to some degree the effects of past experiences and the modification thus af-

(Continued on next page)

David G. Craig

(Continued from page 150)

fects abides to be modified by later experience.

What is Work Experience?

In order to utilize the reader's experience to a maximal degree, a review of the descriptions will be made regarding the concepts of work and experience. The term 'work' has been described as follows:

1. goal directed;
2. consisting of mental and physical activity;
3. one of many kinds of activities that occur in life;
4. tending to be central among all life's activities;
5. individual oriented for some as a means to an end, for others an end in itself.

Secondly, the term 'experience' has been described as follows:

1. process of undergoing, doing, and participating in things in general as they take place in the course of time;
2. a feeling resulting from such direct participation;
3. an entity in time;
4. an interaction between a subject and an object;
5. occurring frequently in time;
6. having reciprocal influence on previous experience.

Why Work Experience?

Of what value or worth then is work experience to vocational education in agriculture? There are several approaches to answering this question. The following is a tenable one.

For Dewey, "the aim of education is to enable individuals to continue their education—or that the object and reward of learning is continued capacity for growth."³ This definition assumes a democratic environment where a mutual man-to-man relationship exists. The nature of an aim is important at this point. First, an aim is more than a mere result. An activity may pro-

³John Dewey, *Democracy and Education* (New York: The Macmillan Company, 1964), p. 100.

It Says Here—

Insect Display Case Easily Made

DOUGLAS TOWNE, Research Associate, Cornell University

Neat and attractive insect display cases for temporary use in displays or instruction, may be easily constructed from the following materials:

- 1 balsa wood $\frac{3}{8}'' \times 3'' \times 16''$
- 2 upson board $\frac{1}{2}'' \times \frac{3}{8}'' \times 1\frac{1}{2}''$ radius circles $.010'' \times 5\frac{1}{2}'' \times 16''$
- 1 acetate sheet $16''$
- 16 map tacks medium size
- flat white paint and casein glue

Cut and sand the base and end pieces, glue together, and then paint. Cut the acetate to size and clean with "Kodak Film Cleaner." Attach the acetate to one side of the base with five map tacks. (The tacks should be inserted in an upward direction to prevent the acetate from springing away from the base.)

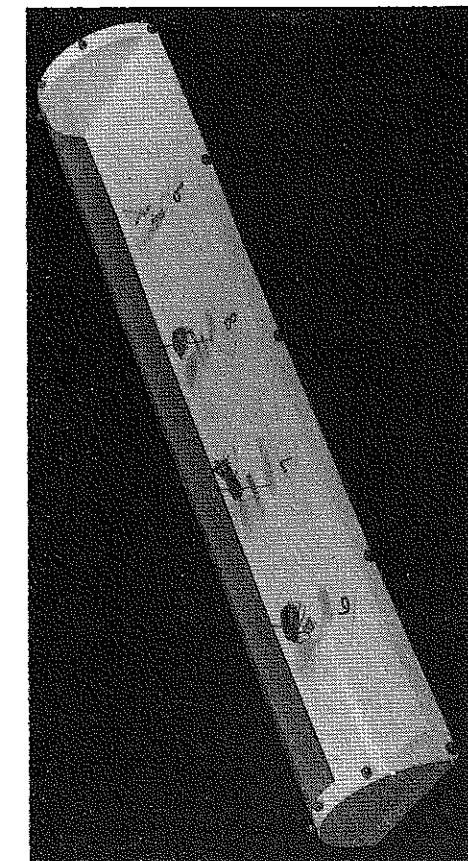
Pin the insects along the center line. Place the first insect $2\frac{3}{4}''$ from one end and the others at $3''$ intervals. Pin the rest of the acetate with three pins on each of the half-circles, and five pins along the base (again slanting upwards).

Other materials may of course be substituted for those listed above. If it is desired to keep the insects in this case for an extended length of time it will be necessary to include

duce energy which is a result. "An aim implies an orderly activity, one in which the order consists in the progressive completing of a process."⁴ Secondly, the aim influences the procedure to be used, i.e., examine conditions to see what means are available, put means in proper sequence, and evaluate alternative means. Thirdly, acting with an aim is systematic and implies an intelligent act.

In a democratic work experience situation, an individual needs and

⁴Dewey, p. 102.



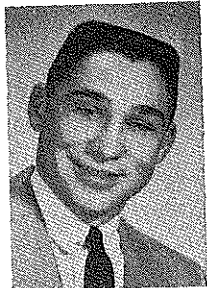
some form of naphthalene (moth balls will suffice) and provide an airtight seal between the acetate and the frame. (Glues containing acetone cannot be used to provide this seal since the acetone will dissolve the acetate.)

wants to have the opportunity to be expressed and, in turn, influence individual and group goals. These goals are compared with available work experience situations. The teacher of agriculture, agriculture business employer and student then establish the kind of means needed to attain the goal. Value is placed upon interaction and continuity of interaction of the individual with elements in the work experience as well as the amount of growth exhibited by the individual. It is in this way that Work Experience can be an educational experience.

Unique Plan—

Work Experience for Boys— Service for Farmers

WILLIAM URBAN, Vo Ag Instructor, Brillion, Wisconsin



William J. Urban

The Brillion Future Farmers of America Chapter has launched a unique project—the Brillion FFA Chore Service. The chore service is designed to provide the farmers with competent help, so that he can take a vocation or leave the farm in case of emergency, as well as provide responsible work experience for boys.

The farmers in the Brillion School District have been tied to their farms because of the difficulty in acquiring competent hired help to do the daily farm chores of milking and feeding livestock. The members of the Brillion Chapter decided to organize the chore service after an adult farmer suggested a need for the service.

The idea was brought before the Brillion Agriculture Council for further suggestions and ideas. The Agriculture Council assisted the Vo-Ag Instructor and members of the FFA Chapter in organizing the project. Rules, outlining the chore service, were constructed by the chapter members with assistance from the Ag Council and professional people in Brillion. Dependability and competency of the students were considered by the council to be highly important, if the project was to succeed.

Workouts

To develop this competency and responsibility the Vo-Ag Instructor held several workshops and demonstrations to insure the use of proper procedures when milking cows. The consequences of failing to follow proven and accepted methods of milking cows were highly stressed. Since the amount of responsibility a person can assume increases with age, the younger ninth and tenth grade Vo-Ag boys were paired with eleventh and twelfth grade stu-

Farmers desiring the service must contact the Vo-Ag Instructor who will make a preliminary visit to the farm. The Instructor will preview the work to be done and get the necessary forms and contracts completed and signed. Legal protection is very important in modern agriculture, therefore, a contract protecting the FFA boy and parents of liability must be completed. However the contract does not release the boy from liability, if he is grossly negligent. The farmer must have liability insurance coverage in the event of injury to the FFA student before any service will be

rendered.

One or two pairs of boys will then be assigned to perform the desired service. These students will make a visit to the farm in question a day in advance to learn the proper procedure of doing the chores. In addition to this instruction, the farmer must fill out a chore procedure form which was left by the instructor. This chore procedure form contains special instructions and emergency phone numbers such as: a veterinarian, electrician, plumber, and a farm friend who can be called.

(Continued on next page)

LABOR CONTRACT

THIS AGREEMENT made this _____ day of _____, 19____ between _____ party of the first part of the Town of _____ County of _____ and State of Wisconsin; and Future Farmers of America, Brillion High School Branch thereof; and particularly _____ a member thereof, and a minor, and _____ party of the second part, parents and general guardian of said minor F.F.A. member, of the Town or City of _____, Wisconsin

THIS CONTRACT IS VALID DURING THE FOLLOWING DAY(S) _____

WITNESSETH, that the said party of the first part, in consideration of the agreements of the parties of the second part, hereinafter contained, covenants and agrees to employ said Future Farmer of America member to do chores and general farm work on his farm as either vacation help or emergency helpout help when required.

It being understood by the party of the first part that he is employing a minor, with said minors consent and the consent of his parents or general guardian, merely as helpout labor to do chores, etc., either under his general supervision or in his absence; said party of the first part agrees to carry adequate liability insurance covering said minor employee with limits of not less than \$5,000.00. Said party of the first part further agrees that he shall pay as compensation for said services performed the sum of \$ _____ per hour as wages; and the sum of \$1.00 per round trip as mileage for a minimum distance of twenty miles, and at the rate of five cents per mile for mileage over twenty miles. If said F.F.A. chapter requires a deposit from said party of the first part, said deposit shall be in the sum of \$ _____ and payable to the F.F.A. treasurer. All monies due under this agreement shall be paid by the party of the first part to the F.F.A. treasurer, in care of the Brillion High School, Brillion, Wisc. There shall be no liability on the parties of the second part for any death of livestock or other injury to property, happening through the use of ordinary care and prudence in the exercise of the duties to be performed by the party of the second part; and the party of the second part (chore boy) agrees that he will at all times follow the instruction of the party of the first part and in all ways perform his duties in a good husbandlike and careful manner.

Dated at Brillion, Wisconsin this _____ day of _____, 19____
In Presence of

Superintendent

Party of First Part

F.F.A. Member

William J. Urban

(Continued from page 152)

Related to Teaching

As a teaching aid for the Vo-Ag Instructor, the boys on completion of chores, are asked to fill out a form commenting on the work completed. This information may help the farmer learn of new practices proven through research and advancement; this practice also gives the students a chance to teach the adults what they have learned in their Agriculture class-room.

Costs

Rates covering the cost of the service are set at \$1.00 per hour per boy. A flat rate of \$1.00 will be charged for each trip as mileage payment. The farmers are requested to make a deposit to cover the approximate cost of the service. Any unused portion of the deposit will be returned to the farmer.

During the academic school year the chore service is limited to weekends, because a conflict in school attendance could arise. However, during the summer months the service is available any day desired.

The Brillion Chore Service has been operating this first year with success. The FFA Chapter had been called on ten different occasions to relieve farmers from their daily chores the final six months of the project.

Practice What We Preach

Surely there is no one left in our field who still believes vocational agriculture should enroll only those who are to farm. Even so, many parents and our public in general feel that preparation for farming is our sole purpose. Perhaps they are more keenly aware of what we do than what we say. We say there are many opportunities in agriculture. Yet we gear our teaching only to farming; we leave it up to the students to find out what the other agricultural opportunities are.

—Earl T. Carpenter, Vo Ag Teaching Tips, University of Missouri.



Left-Right, Vo-Ag Instructor William J. Urban, Kenneth Hedrick, Ronald Eickert & Lester Kocourek. Vo-Ag boys receiving instructions from farmer on the chore service procedures with instructor observing. Lester Kocourek is the farmer getting the service, Kenneth Hedrick is a sophomore and Ronald is a Senior.

To Be Completed By Farmer
CHORE PROCEDURE

Time to Start Chores _____ AM _____ PM Is Phone Accessible? _____
Milking Time _____ AM _____ PM Where? _____

Emergency Phone Numbers

Vet. _____ Electrician _____
Mech. _____ Doctor _____
Plumber _____ Friend _____
Ag. Instr. _____

Feeding Directions: _____

Milking Directions: _____

Special Instructions: _____

To Be Completed By FFA Members
COMMENT SHEET

FFA Members Phone Number
Name _____ Phone Number _____

I. Problems encountered while doing chores: _____

II. Things I like about your farm operation: _____

III. Items in your farm operation we suggest for improvement: _____

Utilizing Outside Resources In Agricultural Education

O. E. THOMPSON, Agricultural Education, University of California, Davis

Until recently the teacher of vocational agriculture, the teacher educator, the supervisor, and the researcher in agricultural education could operate more or less independently from others in professional education. However, this time of complete independence—indeed, often of complete disassociation—has now passed. *No longer can this group enjoy the luxury of the closed fraternity, the comfort of the inner circle, or invulnerability from the outside world.*

In the early days of vocational education in agriculture, this position could be justified and, undoubtedly, the building of a closely knit empire has contributed substantially to the success and reputation vocational agriculture has earned for itself. But with the development of a self-contained empire, agricultural education started to acquire the characteristics of certain other institutions. Members become complacent with success, obtaining glory from the past, remaining oblivious to the present, and repulsing attempts to redirect their efforts toward the future. As a result, forces closely allied with vocational agriculture are suggesting that no longer can this group solve all its own problems from within its own ranks. The industrial and economic world has advanced at a more rapid rate than have the programs designed to prepare workers to serve this great enterprise. *Thus, it is forcibly demonstrated that vocational agriculture must change—and to do so it must go outside its ranks for assistance in solving its problems.*

Root of the Problem

Today's problems often have their roots in the basic disciplines. Professionals in agricultural education have all too often been forced to perform as applied social scientists, attempting to use their knowl-

economics, and other basic social sciences to solve problems. Unfortunately, their understanding of the basic social sciences often lacks depth; consequently, the full significance of many problems has occasionally been missed and, as a result, studies in agricultural education have suffered from this lack of depth.

In answering questions in education today, an effort is being made to bring a community of disciplines to bear upon the situation. Academic areas in the field of education have recently involved the physicist, the mathematician, the chemist, and other physical scientists, in addition to social scientists, in curriculum development and course content. Taking a cue from what has been accomplished in these other fields, vocational educators must make increased use of the scientist, and the social scientist. These are some of the major outside resources which must be utilized as agricultural education approaches its own new frontiers.

\$\$\$

A second resource, and one which has become increasingly available in recent months, is financial support, both for program development and research. A survey used in agricultural education in a sample of states revealed that financial, technical, and professional assistance were used in many programs. For example, a western state doing an occupational study is using the resources of its university research foundation, the university guidance and testing service, and the local data processing center. An eastern state was receiving research business and industry group, from the Council of Agricultural Cooperatives, and from a Ford Foundation grant. A midwestern state was assisted financially by the Production Credit Association and by a



O. E. Thompson

Youth Committee. A southwestern state received \$2,000 from a small Chamber of Commerce for an area occupational study. Another midwestern state obtained research and development funds from a Federal Land Bank, a Rural Electric Association, and the State Game Commission. Other resources used by states included funds from the National Defense Education Act, the McIntyre-Stennis Act for the study of forest recreation opportunities, and from farm equipment dealers associations, to name just a few of the many sources available.

The above-mentioned resources are in addition to the funds from the Vocational Education Act of 1963. Most states in the study either had research or development projects funded by this source, or were making application to this source.

Consultants, Anyone?

One particularly interesting point became evident in this survey: the states limited their efforts for outside assistance primarily to financial support for research activities. *No mention was made of using consultants from other disciplines.* The use of persons from the related disciplines is apparently being approached with caution, and perhaps it should be; unfortunately, all too often it is not being approached at all.

What are the priority areas in vocational education where assistance from professionals in related disciplines is needed? Much time in vocational education is devoted to teaching skills, yet little is known about the most efficient and effective methods to teach them. Employers report that personality traits, habits, and attitudes are major contributors to employee failure,

Farm Machinery Survey Results Prompted Summer School Course

W. FORREST BEAR and A. K. SOLSTAD,
Agricultural Engineering Department, University of Minnesota

Agricultural machinery and equipment are tools of the trade for the Minnesota farmer who lives on an average sized farm of 225 acres. Value of this machinery would be difficult to estimate due to varied farming enterprises but it would range between 15 and 50 thousand dollars. This equipment is used to harvest crops with an average per acre income of \$63.00 for corn, \$27.00 for oats, \$36.00 for wheat and \$52.00 for soybeans.

With this investment and the farm income dependent upon machinery it could be assumed that all machinery is properly adjusted for maximum efficiency, *BUT* this was not the case as reported by vocational agriculture teachers completing special problem assignments for Professor A. K. Solstad.

Plows Checked

Twenty plows were checked for a number of standard adjustments. Results were as follows: (1) Most shares and bottoms had either too much suction or not enough. Less than 20% had the correct amount; (2) Rear furrow wheels were correctly adjusted in 35% of the cases, but this was contributed to luck as

few plows indicated any signs of adjustment following original set-up; (3) Rolling coulters had been removed by 15% of the operators and of those remaining, 85% were too high and 95% were set too far to the landside. The coulters were all dull and only one-fifth of them had ever been sharpened; (4) Tractor wheels were set-in too close in 80% of the cases which influences the center of pull to the center of draft; (5) The hitch point on the plow was too high in 90% of the cases and the same percentage were improperly hitched in width from the land or furrow; and (6) The hitch point on the tractor was incorrect in three-fourths of the cases. There did not appear to be a correlation between makes and age of plows, but rather proper adjustment was more dependent on the operator and his mechanical ability.

Mowers Studied

Nineteen mowers were studied and with regard to lead of the cutter bar, approximately one-half were lagging and 10% leading. One-half of the mowers had correct register and proper adjustment of the

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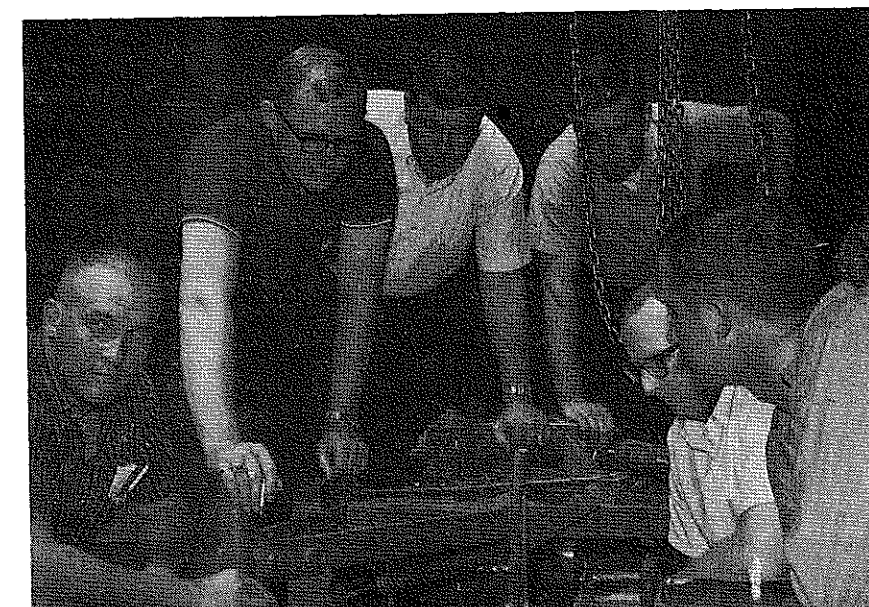
(Continued from page 154)

yet little research in vocational education is focused directly on these problems. Why do we find a lower unemployment rate among former vocational agriculture students than among their high school colleagues? Do these agriculture students possess distinguishable personal characteristics? If so, were these characteristics taught in vocational agriculture? How can the vocational educator help develop a healthy work attitude in a student who comes from a family where work is not considered to be important? Solutions are needed for these and a multitude of other problems in vocational education. The roots to many of these problems are deeper in the personality of the individual than most vocational educators are prepared to delve. Perhaps the vocational educator can contribute by identifying the basic problems, by providing subjects to assist the researcher in his experimental studies and, finally, by helping the researcher interpret his findings for application in new curriculums.

Priority Areas

What are the priority areas for development in agricultural education for which outside funds are needed? Of prime importance, in California at least, is the need to develop effective programs of vocational education in small high schools. Even though California leads the nation in population, it has about two hundred small schools primarily in rural areas. These school service areas are typically devoid of local employment opportunities for their graduates. The problem, then, is establishing a program of occupational education for the student who must leave his home community to find employment. A program is needed which will prepare these individuals for employment in jobs that do not exist at the time of preparation. Research and pilot programs are needed to gather information on this problem. Another priority area

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Discussion on the adjustments for the semi-mounted mower.

A Rationale—

State Programs of Research and Development

ROBERT E. TAYLOR, Director, Center for Research and Leadership Development, in Vocational and Technical Education, Ohio State University



Robert E. Taylor

We all recognize the need for the continual improvement of agricultural education, for a constant effort to increase its efficiency and effectiveness, and for providing a dynamic "growing edge" of knowledge and practice.

Probably, too, we are all aware of the limitations of our maturing institutional or organizational structure to provide a viable means of assuring this growing edge. As John W. Gardner so ably points out in his book, *Self-Renewal*, "When organizations and societies are young, they are flexible, fluid, not yet paralyzed by rigid specialization and willing to try anything once. As the organization or society ages, vitality diminishes, flexibility gives way to rigidity, creativity fades, and there is a loss of capacity to meet challenges from unexpected directions . . .¹ Similarly, the infant is a model of openness to new experience—receptive, curious, eager, unafraid, willing to try anything and above all not inhibited by fixed habits and attitudes. As the years pass he loses these priceless qualities. Inevitably, he accumulates habits, attitudes, opinions. If he did not, he would remain infantile and wholly incapable of coping with his environment. *But each acquired attitude or habit, useful though it may be, makes him a little less receptive to alternative ways of thinking and acting.* (emphasis added) He becomes more competent to function in his own environment, less adaptive to chances."²

Fortunately, Gardner does not relegate a "maturing" organization or program to the grave. He pro-

vides hope in his attack on the problem of keeping a society or an organization young in its outlook and functioning. "A society whose maturing consists simply of acquiring more firmly established ways of doing things is headed for the graveyard—even if it learns to do these things with greater and greater skill. *In the ever-renewing society what matures is a SYSTEM or FRAMEWORK within which continuous innovation, renewal and re-birth can occur.*"³ (emphasis added) Gardner's comments on society seem to have application to our programs of agricultural education.

Key Problem

The central problem, then, may be, how can we provide for *self-renewal* in agricultural education? How can we provide the *system* or *framework* for continuous rebirth? How can we retain the best of the old and yet continuously seek out new and improved methods? How can we respect, but not worship tradition or historical accidents? How can we *systematically* and *deliberately* make agricultural education and vocational education self-renewing? Perhaps two of the keys lie in the words, *systematically* and *deliberately*. To me, these words, along with Gardner's words, *system* and *framework*, imply an administrative policy, an organizational structure, and commitment to implement a comprehensive program of research and development. They imply permissive policies, adequate funding, capable personnel, and other resources needed to focus on this critical need.

State Program May Be the Answer

In the minds of many, an organized state program of research and

development provides one of the best approaches to self-renewal.

It seems to me that, for obvious reasons, a state is the logical unit of organization. Individual teachers and districts can make a substantial contribution to developing and refining innovations in agricultural education, but we shouldn't rely solely on this "bubble up" process. States have a responsibility for financing a systematic, continuing program of R. and D. to identify, design, field test, evaluate, and disseminate innovations which promise to have application to a large number of schools.

Turning from agricultural education to agriculture, to industry, and to other organizational systems, I am reminded and impressed that they long ago gave up their individual "back porch" laboratories, that they don't have everyone trying to develop a new variety of wheat or invent the new Cadillac. Neither do they wait until they can no longer sell this year's model before trying to make their best present product obsolete. Furthermore, they allocate a healthy portion of their resources to this purpose. Their programs of research and development not only provide new products and services but they also maintain constant vigilance over the "quality" and "current utility" aspects of their present products.

How "Different" are We?

By contrast, agricultural education literally has no systematic, organized, comprehensive, continuing state programs of research and development. Too long we have viewed research as a formal ritualistic activity outside the administrative mainstream. We lack, and

desperately need, a deliberate procedure for initiating needed research and identifying, developing, testing, and disseminating promising educational innovations, a mechanism built into and coordinated with our state administrative organizational structures. Typically, we have made little investment in this area. We have not provided the needed organizational structure for research and development. In some instances our policies stultify individual efforts. We long have lamented the lack and slowness of change, but have not initiated the type of organized continuing program needed to identify, effect, and accelerate desired change.

What is implied in a comprehensive state program of research and development? What are its dimensions? Perhaps it can best be described as a plan for providing a sequence of events ranging from original discovery of new knowledge to its application and use in school settings. The chart illustrates the major stages in this sequence and describes some of the activities associated with these stages.

Regardless of whether one agrees with the terminology or the sequence, he should accept the multi-dimensionality of the total process. The important point here is the need for developing a mechanism within a state which embraces and fosters *all* of the various stages of research and development. To do less is to court failure. Furthermore, since evidence indicates that the stages are different and that they require different circumstances and people for success, a carefully planned approach is needed to assure that the stages occur in sequence, one growing out of the other, and that the essential climate, personnel, and other appropriate resources are available for each stage. This cannot be left to happenstance or fortuitous circumstances. It must be planned. The wide spectrum of activities included, which involved many workers in many settings, is further evidence of the need for effective, long-range planning and organization.

Dimensions of Research And Development*

Generating New Knowledge — Basic Inquiry into the Way Things Are

Devising Procedures for Utilizing New Knowledge and New Applications of Existing Knowledge

Determining the Utility and Applicability of a Procedure

Securing the General Adoption of a Procedure

BASIC RESEARCH
Theory Building
Scientific Investigation
Empirical Studies
Experimentation
Surveys
Status Studies
Research
Classroom Experiments
Classroom Trials

DEVELOPMENT
Applied Research
Innovation
Design
Invention
Curricular Developments
Application
Planning Pilot Programs

FIELD TESTING
Laboratory Testing
Evaluation
Appraisal
Review of Administrative Policies
Distribution

DISSEMINATION
Diffusion
Demonstration
Teacher Education
Adaptation
Instructional Materials
Promotion

* Adapted from materials presented by Henry Brickell — National Vocational Education Seminar on The Administration of Research — The Ohio State University, 1965.

Must Go All the Way

Change and improvement can be effective but it takes time and resources. Realistically we need to give more attention to providing for all stages of the change process if we expect results. It would only seem reasonable that an organized, deliberate, and systematic approach will be most efficient and effective in the long run. Literature and logic both support the need for providing a complete and comprehensive program. For example, the development of a specific educational innovation which stops short of "field testing" in a realistic school setting carries a tremendous burden of proof. It will be hard to "sell." Ideally, it shouldn't be "marketed" until tested. Furthermore, the innovation may be premature or adopted by the wrong teachers for the wrong reasons. Assuming an innovation has been field tested and found worthy of recommendation to a large portion of the departments in a state, research on diffusion of innovations clearly identifies some effective means of "wholesaling" this innovation and taking advantage of the dynamics inherent in the adoption process. For example, local demonstration centers utilizing teachers who are opinion leaders provide one of the best known means of securing rapid

adoption of improved practices growing out of research. Furthermore, there is evidence to indicate that teachers aren't going to "adopt" until they are adequately prepared to effectively utilize the innovation. They will tend to adopt when they feel confident and secure in using the new method, when they believe they can succeed with it. Providing instructional materials and other assistance needed will facilitate their adoption of the innovation.

We too often have published our research or "proclaimed" a practice good without following through with the later steps in the change process. Funds are available and, in my judgment, could be effectively used to support research, development, pilot programs, field tests, and demonstration centers—some major dimensions of a state program of R. and D.

Summary

Restrictions dictated by the length of this article preclude any depth discussion of the specific activities included in an R. and D. program. Rather, the article's central purpose is to highlight the need for providing a mechanism for *self-renewal* in a state. It is a plea for developing policies and investing

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¹John W. Gardner, *Self-Renewal: The Individual and the Innovative Society*. New York: Harper & Row, Publishers.

Visitation is Still Important

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

A successful teacher reports that his most rewarding experience is that of visiting and working with students in their homes, on their farms, and in the establishments where they are employed. This would probably be true for many others. Teachers of vocational agriculture have much experience of home visitation.

The ultimate aim of all visitation should be of an educational nature. It usually involves the teaching of skills, the promotion of interest in some phase of the program, or the building of relationships so that the teaching program will be enhanced. Often each of these is accomplished to a measure during the trip to the home of a student. Some visits are made for the purpose of building confidence and securing support so that later educational ventures will bear fruit. Misinformation, prejudices, a lack of interest, and fallacious attitudes toward vocational agriculture may be counteracted through this approach.

Purpose

One of the prime things the teacher attempts to accomplish through the visit is to develop a mutual understanding and to secure the confidence of those contacted. A personal interest in the student, his family, and in the things the learner is concerned with is a means of developing wholesome relationships. Teachers have won the friendship and cooperation of families through evidencing interest in such things as show winnings of the student, the beauty of the African violets in the home, a well-kept yard, improved livestock.

If there is an earnest and sincere desire to carry teaching to the doing level, it will require personal visitation to the homes of students with supervised farming programs and to the business establishments that assist in the cooperative program of

employment. Here the opportunities present themselves for the dispelling of misunderstanding, hesitation, apathy, and indifference.

Some teachers seem to feel that the job can be accomplished through the day-by-day classroom contacts and teaching with a little embellishment a couple times each month during scheduled FFA meetings. While not depreciating these activities, it should be emphasized that the intimate relationships developed through home visitation can be catalysts which bring about the fulfillment of things taught in the classroom, the shop, and on the job.

Share with Other Teachers

It should be pointed out that some of the needs discovered by the teacher through visitation can be met better by other faculty members. In these instances the information gleaned by the instructor of vocational agriculture should be shared with fellow workers so that they may act intelligently in their relationships with the student and his family. This may be a means of generating much good will toward the teacher, the program of education in vocational agriculture and the entire school in general.

Educational needs of the student and of his family may be uncovered through home visits. Follow-up can mean much to the lives of these individuals and to the instructional program as a whole. There is an excellent opportunity to explain the educational program, its objectives and requirements. The teacher should utilize the occasion at times to clear-up misconceptions or vague understandings concerning other school policies.

Represent the School

At a recent conference of high school administrators during a dis-



J. C. Atherton

one superintendent told the group that his teacher of agriculture would be worth his salary even if he did not teach a formal class. This instructor is the prime contact between the school and the rural people. He is the eyes and ears of the school when it comes to school-community relationships.

Visitation is a means of extending school to the farm and to agricultural businesses in the local community. Some visits may be for social purposes, but as a rule they should be educational in nature. Home contacts are made with all students to give them instruction, to win their confidence, to offer encouragement, and to lead them into a comprehensive program of vocational agriculture.

Schedule and Purpose

Prior to a home visit the teacher should determine the purpose or the goal to be attained. This will dictate to a great degree the conduct of the teacher while on the trip. The needs of the student, the attitude of the family, and the type of supervised experience program in progress are all factors to be considered when planning the visit. Although the purpose of the visit has been ascertained and the trip designed to accomplish this purpose, it should be remembered that concomitant values should not be overlooked.

Schedule most visits. Determine when it will be convenient to visit and then let the student know the time to expect you and what you plan to do while there. Prior to the trip, review the background of the individual. Refresh your memory about the home conditions of the pupil, his likes and aversions, his needs, and his supervised experience program.

Following through On Instruction

HOWARD PEAKE, Teacher of Agriculture at Old Kentucky Home High School, Bardstown, Kentucky

J. C. Atherton

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While at the home of the student, meet his entire family. In numerous instances the mother is the one who determines the success or failure of the children in their educational work. Neither parent should be ignored or slighted. Enlightened cooperative parents is a worthy aim in visitation. There is a need to involve more people in the educational program. Community contacts facilitate the discovery and enlistment of local resources which can be used in teaching effectively.

Summary

Effective visitation involves a series of steps or procedures. These include:

1. *Deciding upon whom to visit at this time*
2. *Clarifying the reasons for the visit*
3. *Scheduling the visit*
4. *Reviewing the background of those to be visited*
5. *Making the visit, being a good observer and a good listener. Following through on the implementation of the reason for the visit*
6. *Summarization of the visit and the recording of pertinent information*
7. *Using the things learned from the visit.*

Since he will be working with the individual throughout the year and possibly for a number of years each teacher should develop a technique for securing and preserving information relating to those visited. Periodically, at least once a year, there should be an evaluation of the visitation program with appropriate replanning of it.

Visitation is important and essential. It should not be relegated to chance or spare time. It is an integral part of the program of the effective teacher of vocational agriculture. It is a continuous activity and must be practiced during the entire year.

Many boys act as if classroom, shop, and on-farm activities are three different facets of learning. Actually they go together as hand in glove. Too many times we have boys who know all the answers in the classroom, but make no use of this knowledge on the home farm. This is unfortunate because we learn what we practice. A boy who makes no use of his knowledge and skills will soon revert to ignorance unless he practices this knowledge and skill. This problem can be alleviated by a well-planned course of instruction in which the classroom, shop, and on-farm activities supplement each other.

A boy in his freshman year in a community where beef cattle is important starts planning his farming program and decides his farm situation is best suited to beef cattle. He cannot wait until his sophomore year to learn how to treat for footrot, castrate, dehorn or learn what to do when the calf only takes two teats; because these problems will confront him in his first year. The boy can study these things in class on individual problem days under the guidance of the teacher, if these problems do not justify group teaching.

His next problem may be how to restrain a 1000-pound cow with two sore teats which have never been touched by human hands. Most farms have a rope somewhere if it has not been loaned to a neighbor. However, not being a cowboy many farm boys will let this situation develop into mastitis resulting in the loss of two teats.

Shop and Farm

The answer in this situation is a cattle catcher built in shops as the student's first wood-working project. This catcher will cost approximately \$5.50. One needs only nine bolts six and one-half inches long, a set of gate hinges, and four pieces of two



Mr. Peake with a freshman boy showing the cattle-catcher he built in the shop. This is one of 38 built in the shop during the year.

by four which are eight feet long. This catcher is simple to make out of rough lumber and will last a lifetime. It is custom made to fit any specific stall door, having a two inch extension on the bottom to keep it from being pulled toward the calf, and a chain to keep it from being pushed out. To keep the gate from being raised off the hinges, a hole is bored in the post above the top hinge and a bolt inserted when in use.

Dehorning, vaccination, and castration are handled in a similar manner. The calf is caught in the catcher the boy has built and a nose lead is placed in the nose.

We have all heard the story that the old way to teach swimming was to throw a person in the water and let him sink or swim. Let us not give our boys the sink-or-swim treatment in regard to on-farm supervision. Let us provide them with a thorough understanding of the problem, the right tools to tackle it, and then spend the time and have the patience necessary until the boy has acquired the skill himself.

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(Continued from page 154)

for development is that of vocational employment counseling. Counseling cannot merely be concerned with the present. Programs for determining future employment opportunities in agriculture and related industries must be developed. Will agricultural labor be replaced entirely by the machine and the technician? What competencies will the technician need? Will ownership of farm machinery eventually be in the hands of leasing firms? What employment opportunities would this move create? Will other food preparation industries decentralize as the meat industry has done? Will maintenance on farm machinery be under contract, as is presently the case with office and business machines? These and many other pertinent problems need to be studied with the use of outside resources.

Problems Too

Involving outside resources in the area of vocational education offers at least a prospect of substantial benefits. However, it also raises certain problems:

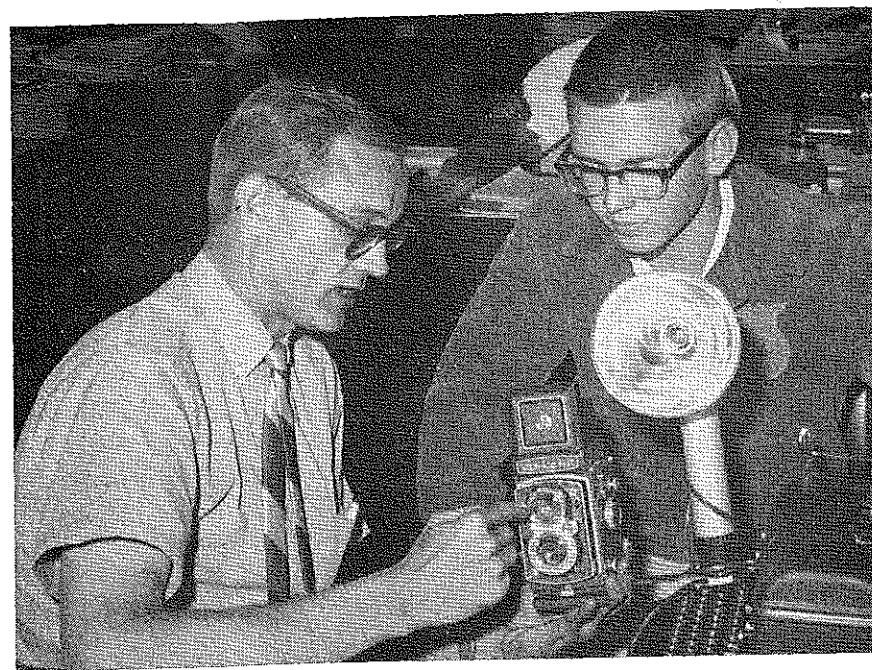
1. Not all persons in the basic sciences (social and natural) appreciate the fact that their discipline can make a contribution to vocational education. Consequently, persons capable of applying their discipline to problems in vocational education must be sought out and encouraged to participate in research of this nature.

2. Expanded programs in vocational education have created an acute shortage of professional workers in this field. A real danger exists in expanding development and research faster than professional personnel are available to administer them.

3. Outside money for research and development should permit the individual worker initiative in design of experiment or program and freedom to pursue this work with a minimum of artificial restrictions.

The Challenge

Certainly both the utilization of



Charles Palmer, Lakeland chapter, learns camera operation from farm editor.

W. F. Bear and A. K. Solstad
(Continued from page 155)

hold down clips. Better than one-half of the mowers had an average of 15 ledger plates out of alignment.

Summer School Program

Results as stated prompted the summer school offering of "Problems in Advanced Farm Mechanics," which included machinery fundamentals, service, repair and maintenance. Machines studied included the plow, mower, corn planter, farm sprayer, combine and baler. Basic unit operations for all machines were studied and laboratory assignments covered the cali-

plines and the availability of financial support from outside sources provide real rays of hope for vocational education in general and vocational agriculture in particular. As we move ahead in vocational agriculture, we need not be defensive. Our colleagues already know we have a good program, but we think they can help us improve it. We need to let them know we have the best public support in history for vocational education, and that we invite them to join an already successful team. The challenge is here; the resources are available. Our challenge is to make intelligent use of these in the further development of vocational agricul-

bration and adjustment of the machines. Demonstrations were given by students to better acquaint them with the machines and to prepare them for the presentation of the material to their day school and young adult farmer classes. The instructional program for their home school situation was outlined. Teaching materials such as study assignments for use in the classroom, shop and home farm for three of the machines were also developed.

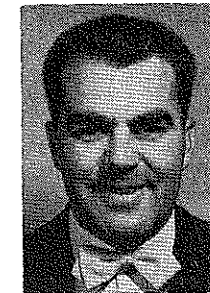
The intent was to spend one-third of the time on presentation of subject matter, another one-third developing and improving the teacher's mastery of subject matter and the remaining time in preparation of teaching materials that could be used immediately on the job.

Conclusions

The conclusions of the group confirmed the importance of the topic to the farmer, that present instructional programs do not include enough machinery service, repair and adjustment for either in-school or out-of-school groups, that teachers need to improve their knowledge of agricultural machinery, that increased confidence by teachers will result in better coverage of the subject matter field and that too many machines were studied in the short time of one summer school session.

Let's Get Going!

WILLIAM BAKER, Thurmont High School, Thurmont, Maryland



William G. Baker

Public Law 88-210, The Vocational Education Act of 1963 is two years old. Yes, it was signed into law by the President on December 19, 1963.

The big question as I see it now is what are we waiting for? For nearly two years a lot of money, a lot of talk and most important, a lot of potential students have gone "down the drain." As I understand the implications of the Vocational Act on Vocational Agriculture, we can train for any occupation involving knowledge and skills in agricultural subjects.

There are two major problems that seem to be foremost in my mind from the new ideas implied:

1. *What effect do these new approaches have on my present program and course offerings of mostly production agriculture?*
2. *Just when, where, and how do I incorporate the new off-farm-agriculture occupations ideas into my program?*

When I examine question number one more closely, I begin to realize that I'm not in as bad a predicament as first observations led me to believe. Nothing in the new act says for me to delete any of my old program. The act does specify that existing programs of vocational education are to be expanded and improved. This means that I can still provide instruction to meet the needs of those who are preparing for farming and those who are farming.

To go a step further in solving the problem, I am still at liberty to use basic instruction in farm mechanics, soil science, plant science, animal science, and farm management for those who wish to make a beginning and advance in farming. Finally, the basic facilities for carrying out instructional needs are not lacking. I am free to make effective use of my classroom activities, supervised farming program, farm mechanics and FFA activities.

Needless to say, incorporating the new with the old will cause change to occur in the established program. Constant evaluation should bring desirable changes without havoc to the program.

To meet the challenge of attempting to solve question number two, I have recently had provoked into my thinking many new ideas and concepts regarding the instruction to be offered in a Vo-Ag program. One of the key parts of the problem seems to be the time factor. Just when am I going to find time to do all the instruction suggested? I've finally resolved myself to the fact that the answer to this problem will have to be planned, and then experience from operating the program will have to supply the answers.

New and Old

The inclusion of occupations other than production agriculture into the program affords the use of many old and many new methods and ideas for instruction. At the outset I feel that I still have at the complete disposal of my program all of the basic instructional media offered in production agriculture phases. The first need of any student of vocational agriculture will still be the basic knowledge and skills in soil, plant and animal science, agricultural mechanics, and management. The new phase of the program to be added must be based on student needs with agricultural occupations other than farming as the core units.

To satisfy these needs in off-farm-agricultural occupations, I must use all the facilities available in the present set-up to the fullest extent, plus adding a few new ones. Effective use must be made of occupational guidance offerings. This phase of the program can be greatly enhanced by the use of individual and community surveys of agricultural occupations. More and better occupational guidance on the part of the school guidance coun-

selors and the Vo-Ag teacher are musts. This new phase of the program also calls for greater insight and help from the advisory group for the Vo-Ag program.

Supervised Practice

All students will continue to need supervised practice and the responsibility for keeping records and making decisions. These practices must be carefully planned to provide worthwhile experiences in the student's occupational field. This part of the program will require more time and effort by the teacher. New agricultural occupation areas will mean more study and familiarity with the community facilities, and occupational opportunities.

Students of Vo-Ag will need to participate in FFA activities as an integral part of the instructional program. Regardless of a student's future occupations, the qualities of leadership, citizenship, cooperation, self-expression, and the ability to assume responsibility can be most effectively taught through FFA participation and experiences.

We as Vo-Ag teachers face quite a challenge. The public is well aware of the new implications of the Vocational Act of 1963. We must continue to gain public understanding by the development and effective implementation of a continuing program in vocational agriculture. We must review and evaluate existing programs to make certain they meet the educational needs of all students. Mistakes, headaches, extra time, lack of facilities, and personnel will be some of the obstacles we will face,—but successful programs can be achieved as past history has shown.

What Should be Taught in Welding?

In vocational agriculture, which welding skills should be taught, and what equipment is needed to conduct an adequate unit of instruction for both secondary and post secondary students? These problems should be considered by teachers as they plan the farm mechanics phase of their programs. An organized systematic approach to these problems may help to provide solutions which result in the most efficient use of time and materials.

The data reported in this article were derived from a study, "Some Suggestions for Welding Instruction in Departments of Vocational Agriculture in Louisiana." The purpose of the study was to determine whether or not welding instruction should be included in the farm mechanics course, what skills should be taught, and what equipment should be obtained to conduct a satisfactory program of welding instruction in departments of vocational agriculture in Louisiana.

The author considered the replies of farmers to be an accurate index of the needs concerning welding instruction, hence this study was developed using the normative-survey method of research and mailed questionnaire technique. Questionnaires were directed to 300 farmers through 100 departments of vocational agriculture, chosen according to location within the major agricultural production areas of mixed farming, cotton, rice, and sugar cane. Fifty one percent of the departments surveyed were represented in the report.

The determination of need for welding instruction was accomplished through application of certain factors in the survey instrument. Evidence of need was determined through analysis of the following: interest in welding instruction, welding services utilized by farmers, investment in farm machinery, and data regarding ownership of welding equipment. These indicators were treated individually to establish need for welding instruction, subject areas which should be taught, and equipment needed to conduct a satisfactory program of welding instruction in vocational agriculture.

Summarized are certain facts which were developed as a result of this study and which could be of value in determining basic needs for welding instruction in departments of vocational agriculture:

1. *Welding instruction should be provided to inform the students of the potential economy of this type of farm machinery maintenance.* Farmers could profit through welding instruction by the proper management and use of the welding processes in their farming operations. Many farmers need welding skills to accomplish the repair and construction of their farm machinery and equipment. There is some value in offering welding instruction in the secondary and post secondary programs of vocational agriculture. Certain students could benefit by welding instruction to prepare for careers in the agricultural service occupations.

2. *The electric arc and oxyacetylene welding processes are perhaps most useful because they are best adapted to on-the farm operations.* Most persons may accomplish the mastery of basic skills in electric arc and oxyacetylene welding to a degree necessary to make repairs on farm machinery with only a minimum of welding instruction.

3. *The subject areas determined as a result of this study to be of greater importance to farmers were these: (1) maintenance and safe operation of welding equipment; (2) basic skills in electric arc welding; (3) basic skills in oxyacetylene welding; (4) identification of various metals and welding technique; and (5) repair and construction of farm machinery and equipment.* The welding skills and theories requested most by farmers provided sound bases for organizing welding short courses. Some correlation existed between the welding theories and skills requested by farmers in this study and the short courses in welding instruction prepared by certain manufacturers of welding equipment. Because these subjects appear to be of greater practical value to

VANIK S. EADDY, Vo Ag Teacher
Gesimar, Louisiana



Vanik S. Eaddy

farmers, they should be included in the course of welding instruction, especially for post secondary classes and should be emphasized in welding instruction for secondary students.

4. *A minimum of two stationary type A.C. welding machines rated at 180 amperes and powered by 230 volt, service outlets, should be primarily used for welding instruction with classes of 12 to 15 students in vocational agriculture.* The portable D. C. welder powered by an internal combustion engine may be considered optional where local need exists for the versatility provided. Alternating current welders are perhaps more popular than D. C. because they are more efficient, less noisy in operation, and less expensive to purchase and operate. The facts regarding the two most popular types of welding machines owned by farmers could be beneficial in selecting arc welders for use in the vocational agricultural shop. The A.C. type welders normally offer many years of useful and trouble-free service at a very economical cost of operation. The A.C. welders may be operated indoors without the danger of carbon monoxide poisoning or unpleasant noise caused by operation of the internal combustion engines on D. C. welding machines. Stationary type A.C./D.C. welders may be considered in teaching operation of the D.C. machines where the portable characteristic is not necessary.

5. *A minimum of one set of oxyacetylene welding equipment, perhaps of medium duty service should be obtained for instruction of the gas welding processes in classes of 12 to 15 students.* Oxyacetylene welding equipment may be very useful in complementing the electric arc welding equipment in the farm mechanics shop. Since acetylene weld-

(Continued on next page)

Safety Depends Upon You

VAN H. BURNS, Teacher of Vocational Agriculture,
Saline, Louisiana



Van Burns

When you get this point over to everyone, that safety depends upon you, accidents will be greatly reduced. Most people really do want to be safe with themselves and others. The lack of safety consciousness and know-how is the key to many of our safety problems. Through education we must provide our young people and adults with greater knowledge of safety and safety practices and make them aware of their responsibilities in this area.

According to the National Safety Council as published in the Farm Safety Review, the 1164 accident death rate shows a rise as follows:

Recent estimates show that the 1964 death (accident) total was about 105,000 or four percent more than it was in 1963. Disabling injuries numbered about 10,200,000 including 370,000 which resulted in some degree of permanent impairment—ranging from partial loss of use of a finger to blindness or complete crippling.

Vanik S. Eaddy

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ing may be employed for a long time, quality equipment should be considered for lasting service. The use of acetylene is suggested in preference to other gases because of the versatility possible. Gas cylinders and miscellaneous supplies are frequently needed, therefore a reliable dealer should be contacted for service.

6. *A survey should be made by departments of vocational agriculture concerning the need for welding instruction.* The results of the community survey should be utilized to organize welding instruction and to obtain needed equipment and supplies so that needs of individuals served by the programs are satisfied.

The National Safety Council reported that disabling injury totals were: motor-vehicle 1,700,000; public non-motor vehicle 2,050,000; home 4,300,000; work 2,050,000 and duplication of motor vehicles with other classes numbered 100,000.

Accident costs amounted to about \$16.7 billion, medical expenses of \$1.65 billion, overhead costs of insurance \$3.35 billion, property damage in motor-vehicle accidents of \$2.6 billion, property loss in fires of \$1.37 billion, and the so-called "indirect" costs of work accidents of about \$2.6 billion.¹

What are we doing as Vocational Agriculture Teachers to help prevent accidents that cause injuries and deaths to our farm people every day? Are we responsible for many of these accidents because we have failed to teach our future adult farmers the safety and safety practices they need to know? Think back on the farm accidents that have occurred in your community and apply some of these questions for your thinking:

1. *Did I have the individual or individuals in my classes?*
2. *Was safety ever mentioned?*
3. *Was the accident possibility brought up and discussed?*
4. *Did I include safety in all units and lessons taught?*
5. *How much stress was put on safety?*
6. *Were the safety practices defined and pointed out to the students?*
7. *Was safety involved in the units demonstrated?*
8. *Was there a follow up of safety in the field?*

¹Farm Safety Review; Chicago, Ill., National Safety Council, July-August 1965, P. 7.

9. *Did I call on the many sources of outside help to impress the students with safety?*
10. *Did I dwell on the importance of following the manufacturer's instructions while operating and maintaining machinery and equipment?*

I realize that we are not responsible for many accidents that occur but we must accept our share of the responsibility of attacking this problem through education. It must be a cooperative effort with all individuals involved. We must put into use at all times those safety practices learned and add to our knowledge as the rapid changes in agriculture occur. Many groups and organizations have published excellent materials on accident prevention and most will furnish copies on request. As educators, we must combine our ideas, experiences, and efforts with those of other groups in order to have individuals conscious of how accident prevention depends upon them. To point out how accidents could have been prevented after they occur is too late for those persons involved. Our answer to this situation is education of individuals to the point that they are accident prevention conscious in all their activities.

Think about safety as an individual and as a vocational agriculture teacher and I believe that you will agree that—safety depends upon you.

Book Review

AGRICULTURE IN BRITAIN. British Information Services. Central Office of Information Reference Pamphlet 43, Sales Section British Information Services, 845 Third Avenue, New York 22, New York. Paper cover, 48 pgs. Price \$.80.

For advanced students who are interested in agriculture in other countries this pamphlet will prove useful. Provides a general overview of agricultural production, land use, government subsidies, marketing, research and education in Britain.

RAYMOND M. CLARK
Michigan State University

Making Vocational Agriculture a Truly Community Program

SELZ C. MAYO, Head, Sociology and Rural Sociology,
North Carolina State University

(Part 2)*

B. Research for problem solving.

This concept is almost self-evident and as this point is touched on in a later section, it need not be detailed here. The failure to do problem solving and evaluative research, in my opinion, has been a major handicap in making many Vo-Ag programs pointed and specific in terms of "this" community. Then, too, the failure to do more of this type of research has placed the Vo-Ag teacher on the defensive in many cases because he did not know the results of his own work. Consequently, Vo-Ag teachers are continuously underselling themselves. Such research as envisioned here may go a long way in overcoming one of the major handicaps under which the teacher of Vo-Ag labors — the lack of data from secondary sources that apply to the community unit which is his province of operation.

Organizational Structure is a Basic Tool

The second basic tool, in my opinion, with which the teacher of Vo-Ag may weld his program into a truly community program is the creation of organizational structure designed for his community. It seems to me that there is one basic organizational structure that each Vo-Ag teacher should create and out of which may emerge or develop other organizational structures. *This first basic organizational structure is what I am calling a community communications committee.*

Such a committee on communications envisions a structure through which there is a two-way flow of information and on a continuous basis: (1) there is the flow of information to the Vo-Ag teacher and other committee members from the smaller communities within or which make up his school district; and (2) there is a flow of planned information back to the communities through the teacher and the

*The first part of this article appeared

committee representatives from these smaller communities within the district.

Several problems must be foreseen and handled prior to the establishment of such a committee. First, there is the problem of delineating the neighborhoods or smaller communities (natural areas in the ecological sense) within the school-community. This is usually a very simple but nevertheless a very essential task. In many places this task has already been completed, and in any case, the local Vo-Ag teacher may have at least a working knowledge of such natural areas within his school district.

It is essential, however, that such areas be recognized and understood as separate identities, and at the same time, they should be recognized as parts of a larger whole — the more complete community. Studies have shown that the neighborhood factor *per se* is significantly related to the adoption of improved practices in farming. My own students never cease to be amazed at the differences in response to their program of vocational agriculture exhibited by these smaller communities within their school district.

The Central Vo-Ag Communications Committee would therefore be composed as a minimum of the Vo-Ag teacher and representatives from each of the smaller communities within the school area. Persons representative of interests other than agricultural production may be included on this committee depending on the objectives of the total program. Very careful consideration should be given to including the marketing interest; feed, fertilizer, and seed dealers; mass media, such as newspaper, radio and television; and sources of credit. These, and perhaps several other interests, may, I might even say, should be included on the community communications committee as envisioned here.

Several other purely organizational problems may be visualized very readily. There is, for example, the problem of how shall the representa-

— selection, appointment, election, etc.? There is the problem of length of tenure of each member. How often should the committee meet?

Task of the Communications Committee

What do I see as the real task or tasks for such a communications committee of Vo-Ag? I shall not detail all the things that such a committee might do — much of this detail can be left to your imagination and mature judgement. I do, however, want to sketch in broad outline some of the major tasks of such a group. We must keep in mind, of course, the general theme of this discussion, i.e., that such a committee has as its broad objective what I shall call the research-communication function.

Let us assume that at one of the planning meetings of this communications committee, problems relating to the level of production of various enterprises are discussed. The broad objective is stated as—we shall attempt to raise production levels during the next few years. A detailed goal is arrived at which states that—we shall attempt to raise corn yields by 20 bushels per acre during the coming crop season in this school-community.

During the interval between this meeting and a subsequent meeting held prior to the planting season, the representatives from each of the locality groups or smaller communities, would make a study of corn yields in his own community. Such a study would be made under the general direction of the committee but with specific assistance of the Vo-Ag teacher. The study would consist of determining the yield of corn in his community as well as the production practices in general use which are or are thought to be related to the level of performance in corn production.

These data would be presented to the communications committee for study and discussion. At this point, it should be possible to determine the specific types of problem areas that should be emphasized in each community. The specific goal of an increase of 20 bushels of corn could then be raised or lowered as appeared feasible for each of the smaller communities. At the same time, the specific strategy and tactics of

(Continued on next page.)

Selz C. Mayo

(Continued from page 164)

the educational job could be agreed upon for each community.

The community representatives, the Vo-Ag teacher and representatives of other interests could then take specific recommendation and a program back to the people of each community.

The representatives from each community might establish a working committee within his own community. This local committee should assist the representatives in obtaining the research data as well as working with the representatives in disseminating the information from the central committee and in motivating farmers to change their production practices.

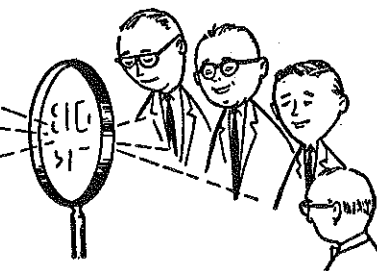
Such local committees would serve several important functions. This should guarantee a supply of mature leaders in each community; this should make many additional people familiar with the Vo-Ag program; this should be another way of utilizing community development organizations wherever they exist; this should be a way of bringing to bear those group pressures which are so important in the process of change in rural communities everywhere; and, this is a way of bringing together what might be called *study groups* and *action groups* in the same community and we have evidence that this is sound educational practice.

Conclusion

Through such procedures and techniques, it seems that a Vo-Ag teacher could begin to develop a truly local community program. A truly community program in the sense that the *actual* local problems are being attacked specifically and local people have major responsibility for bringing about the change. The Vo-Ag teacher becomes a teacher rather than, in some instances, a half-time errand boy of personal service for a few farmers.

It is through this basic organizational structure that other organizational structures may arise. The need for a young farmers program, for an adult program, or for organizations built around commodities, yes, these and many others may develop out of the understanding gained through this basic community communications committee.

BOOK REVIEWS



RAYMOND M. CLARK
Michigan State University

Donald S. Hubbell, TROPICAL AGRICULTURE, Bobbs-Merrill Co., New York

Much improvement could be made in agriculture in many of the undeveloped tropical and subtropical countries, if useful information and improved practices were translated into understandable language and made available to the person involved in the production of agricultural products—the farmer. Such information must be technical enough to reach into the heart of the problems of production yet simple enough to be grasped by the farmer. There is usually a great gap in tropical and subtropical countries, between the scientist and technician who find the answers and the agriculturist who must use the solution. Further, the technical language of most of the bulletins and pamphlets produced through experimentation and research is oftentimes incomprehensible to the average person.

Dr. Donald S. Hubbell has attempted, and been very successful, in bridging this gap in his book, "Tropical Agriculture". His broad coverage of the field embraces such areas as tropical climate, soils and fertilizers, and livestock, pasture, and field crop production. He extends this coverage to include a problem which plagues the farmer in the tropical climate—the preservation and processing of agricultural products. Probably more important than the coverage, however, is his technical yet comprehensive method of treating these areas so as to meet the practical needs of the farmer.

This book is invaluable to the agricultural agent and the extension worker who must have technical information at his fingertips. The author has also met a very real need for a book that can be used as reference material. It will supplement the many inadequate texts used in agricultural colleges, in technical and secondary schools where Nature Study and Rural Science are taught.

For those who attempt to teach in secondary schools and agricultural colleges, for the student who is plan-

ning to work in a tropical climate, for the agricultural agent and extension worker, and for the farmer, himself, "Tropical Agriculture" will indeed be a boon, bringing increased agricultural production and improved farming practices to the tropical and subtropical climate.

RICHARD DAVIS
Grambling College
Grambling, Louisiana

SOILS IN RELATION TO CROP GROWTH, Firman E. Bear, Rienhold Publishing Corporation, New York, 1965, pp. 297, \$12.50

A semi-technical survey of soil science, including the fundamental facts about soils in relation to the methods and means by which they can be made to produce high yields. Well written, and deals appropriately with the chemical and physical properties, biological processes, air and water relationships, and the implements and materials for improving productive capacities. Considerable attention is given to soil amendments, including manures, liming materials, and fertilizers.

Eight of the 27 chapters are devoted to resources of essential plantfood elements. Other typical emphasis include drainage and irrigation; mechanical manipulation of soils; organic matter; manures and composts; and use and selection of fertilizers. The author avoids unessential materials and goes directly to the fundamentals in terms of soil problems.

A basic knowledge of chemistry and biology is needed in order for this book to be of utmost effectiveness as a source of information. It would be well suited for use with students of advanced high school, post high school, and community college and junior college programs involving soils instruction.

The author, Firman E. Bear, is Editor-in-Chief of *Soil Science*, and Head of the Soils Department at Rutgers University.

HILDING W. GADDA, Professor
Agricultural Education
South Dakota State University

Assistantships Available For Graduate Study in Agricultural Education 1966-67*

Following is a listing of assistantships, fellowships and part-time instructorships available for graduate study in agricultural education, 1966-67. 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 (AATEA). 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; 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 1966 deadline for application. Slight variations in this pattern are due to the nature of the data provided by reporting institutions.

*Compiled by V. R. Cardozier, Teacher

University of Arizona

*Research assistantship (1); 12 mo., July; ½ time; \$250 per mo., non-resident fee remitted; master's students; apply by March 1.

University of Arkansas

*Assistantships (4); 9 mo.; September; ¼ time; master's or doctoral students \$125 per mo.; apply by June 1.

Cornell University

*Research assistantships (10); 12 mo.; July 1; 20 hrs. per week; \$206-\$250 per mo., tuition remitted; master's or doctoral students; apply by March 15.

East Texas State University

*Assistantships (4); 12 mo.; June or September; ½ time; lab. or teaching assistants; \$175-\$225 per mo.; master's students; apply by May 1.

University of Florida

*Assistantships - 1 teaching, 1 research; 10 mo. (1); 12 mo. (1); September; 15 hrs. per week; \$250 per mo.; master's (1); doctoral (1); apply by June 30.

University of Illinois

*Research assistantships (5); 9 mo.; September; ½ time (1); ¼ time (4); \$250 per mo., tuition and fees remitted; master's, doctoral or advanced certificate students.

*Assistantship (1); 12 mo.; June or September; ½ time; \$250 per mo., tuition and fees remitted; master's students; FFA public relations work.

*Research assistantships (2); 12 mo.; June; ½ time; \$266 per mo., tuition and fees remitted; doctoral and advanced certificate students.

*Teaching assistantship (1); 9 mo.; September; ½ time; \$266 per mo., tuition and fees remitted;

University of Illinois, Continued

Fellowship; 9 mo.; September; \$200 per mo., tuition and fees remitted; master's or doctoral students.

Iowa State University

*Research assistantships (2); 9 mo.; September; ½ time; master's or doctoral students; \$277 per mo., reduced tuition; supported by Iowa Agricultural Experiment Station; apply by March 1.

Kansas State University

*Assistantships (1 teaching, 2 research); 12 mo.; June or September; ½ time; \$260 per mo.; master's students; apply by September 1.

University of Kentucky

*Research assistantships (2); 12 mo.; June; ¼ time; \$350 per mo.; master's students; State Research Coordinating Unit; apply by May 15.

*Assistantship, vocational education teaching materials (1); 12 mo.; June; \$200 per mo.; ¼ time; master's students; Division of Vocational Education; apply by May 15.

*Assistantship, Reidland Demonstration Center, (1); 12 mo.; June; \$250 per mo.; master's students; 4-C funds; apply by May 15.

Louisiana State University

*Research assistantships (up to 10); 9 mo.; September; 20 hrs. per week; master's or doctoral students; \$250 per mo.; reduced tuition; apply by September 1.

University of Maryland

*Research assistantships (4); 12 mo.; June or September; ½ time; \$260 per mo.; tuition remitted; master's and advanced graduate students; 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 April 1.

Assistantships Available

(Continued from page 166)

Michigan State University

*Research assistantships (3-4); 9 mo.; September; ½ time; \$333 per mo.; out-of-state fees waived; doctoral students supported by 4-C funds; apply by March 1.

*Teaching assistantship (1); 9 mo.; September; ½ time; \$333 per mo., out-of-state fees waived; doctoral students; supported by vocational teacher education funds; apply by March 1.

*Teaching assistantship in agricultural engineering for agricultural education majors (1); 9 mo.; September; ½ time; doctoral students; \$333 per mo., out-of-state fees waived; apply by March 1.

University of Minnesota

*Assistantships; 12 mo.; June ½ time; \$244 per mo., reduced tuition; master's or doctoral students; apply by April.

University of Nebraska

*Teaching and research assistantships (3); 12 mo.; June or September; ½ time (1), ¼ time (2); \$312.50 per mo.; master's or doctoral students; apply by April 1 or June 1.

University of New Hampshire

*Assistantships; 10 mo.; September; 20 hrs. per week; \$240 per mo.; tuition remitted; master's students; apply by March 15.

New Mexico State University

*Assistantship (1); 9 mo.; September; 20 hrs. per week; \$250 per mo.; master's students; apply by February. (Other assistantships in educational administration with minor in agricultural education.)

North Carolina State University

*Research assistantships (2); 9 mo.; September ½ time; master's students; \$266 per mo.; vocational education funds; apply by March 1.

*Research assistantships (6); 12 mo.; June, September, or February; ½ time; master's students; \$240 per mo.; 4-C funds; apply anytime.

Ohio State University

*Teaching and research assistantships (6); 9 or 12 mo.; June or September; 15 hrs. per week; \$217 per mo., out-of-state tuition waived; doctoral students; apply by March 1.

Pennsylvania State University

*Assistantships (8); 9 or 12 mo.; June, September, December or March; ½ time; \$200 plus per mo., tuition remitted; master's or doctoral students; apply March 1.

Purdue University

*Research assistantships (2 or more); 10 mo.; September; ½ time; \$250 per mo., reduced tuition; master's students; apply by May 1.

Rutgers University

*Research assistantships (3); 12 mo.; July; ½ time; \$230 per mo., tuition remitted; master's students; apply by April 15.

Texas A & M University

*Teaching assistantships (4); 9 mo.; September; ½ time; \$300 per mo. for doctoral students, \$275 for master's students; apply by June 1.

*Fellowship (1); 9 mo.; September; ½ time; \$300 per mo. for doctoral students, \$275 per mo. for master's students; apply by June 1.

Tuskegee Institute

*Assistantships (2); 12 mo.; September; ¼ time; 2 @ \$150 and 2 @ \$200 per mo.; master's students; apply by March 1.

Virginia Polytechnic Institute

*Teaching assistantship (1); 9 mo.; September; ½ 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; ½ time; \$135-\$163 per mo.; master's students; supported by Division of Graduate Studies and Research; apply by April 1.

University of Wisconsin

*Research assistantships (2); 9 or 12 mo.; July or September; 20 hrs. per week; master's or doctoral students; \$243 per mo.; out-of-state fees remitted; apply by March 1.

Robert E. Taylor

(Continued from page 157)

funds in this area. The educational and financial climate for initiating such programs has never been better.

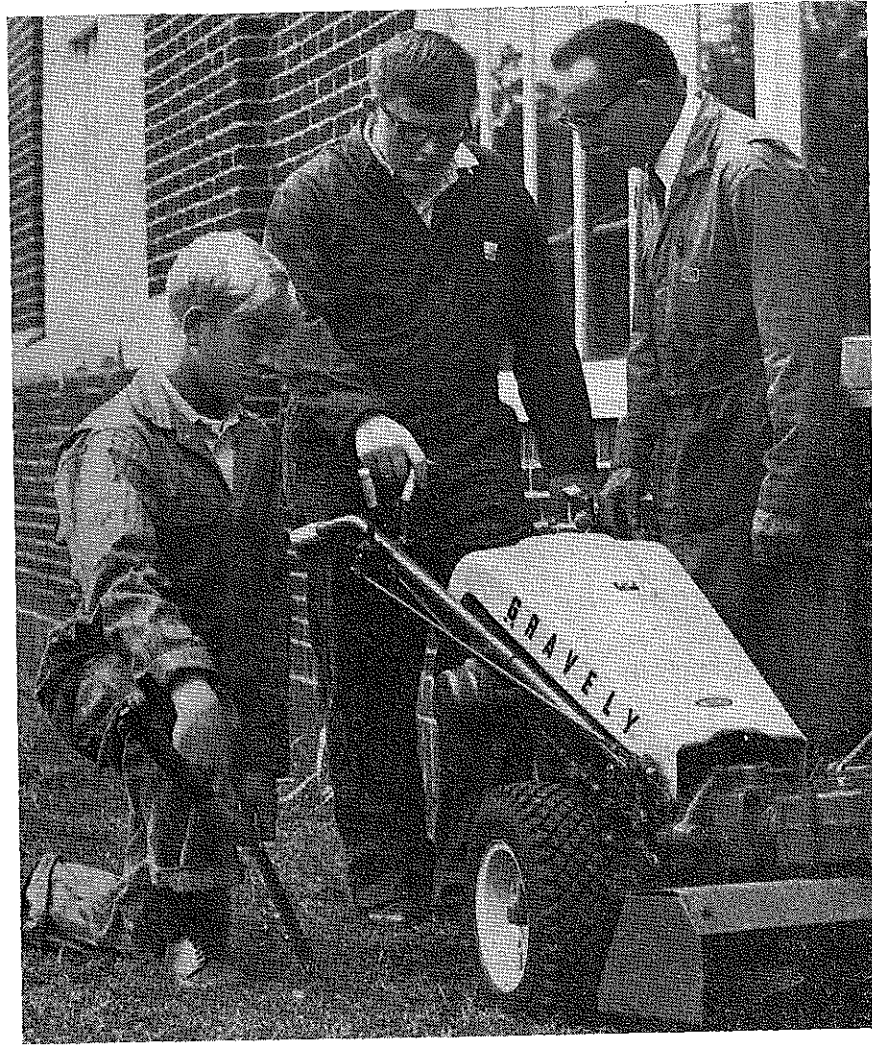
It goes without saying that such an organizational structure should be initiated by supervisors and teacher educators, and involve teachers, administrators, and representatives of other vocational services. Self-renewal doesn't imply doing it alone. We must involve other relevant groups. Representatives of farm and other agricultural groups could make a contribution to a coordinating committee. Such a mechanism should be developed to articulate with and complement the 24 state vocational education research coordination units being established. Organized state programs of research and development, as proposed, would also facilitate cooperation and coordination on regional and national projects.

There will be some who will argue that the needs can be met by individual researchers and that such a mechanism infringes on their freedom. I disagree. Industry, agriculture, and other areas of education have demonstrated the value of an organized, systematic approach to research and development and of the values of the "research team." Furthermore, organizational structure is needed to provide and protect the researcher's integrity. Some may say, "This is too slow. We can't wait." Granted, circumstances and past inadequacies force us to make some decisions and move ahead without the benefit of such a procedure. But this does not provide a valid excuse for further postponing the establishment of such a program. Let's not be so concerned with immediacies that we can't build for the future.

Lest I leave a gloomy impression, I would like to say that I see vigorous seeds of change. Some states are making programs in the establishment of comprehensive, organized state programs of research and development. These programs appear to provide a viable approach to self-renewal for agricultural education.

Stories in Pictures

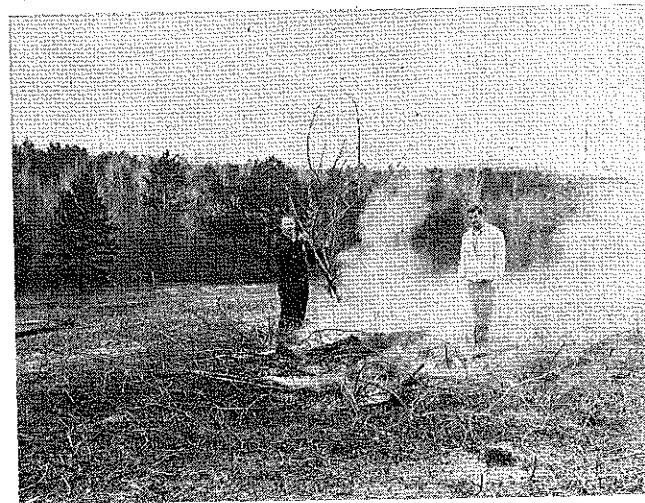
Gilbert Guiler
Ohio State University



Robert Peterson and Bruce Frederickson, seniors at Minneapolis Roosevelt High School, receiving instruction in use of landscape equipment, for use in the horticulture work experience program initiated by the Minneapolis schools this year. The program is conducted by Mr. Luke.



Experimental research is very much a part of the Vocational Agricultural Program at Kingsway Regional High School, Swedesboro, New Jersey. Direct seeding of asparagus is being compared to the conventional method of planting crowns. The consulting group here consists of Mr. Nick Ferrant, Agway; Mr. Brad Johnson, Rutgers' Vegetable Crop Specialist; Mr. George Lange, State Supervisor of Agricultural Education; and Raymond Warren, FFA Demonstration Chairman.



Bill Smith, Alabama's Future Farmer of the Year, is shown burning brush from 40 acres of land he cleared by hand. Most of the wood from this land was sold for fire wood. Frank Hendrick is the vocational



Offering fertilizer to a customer. A thorough knowledge of fertilizer analysis is essential.

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Kansas vocational agriculture teachers get in-service training in adjustment, care, and use of spray equipment. A sprayer was dismantled, inspected, and calibrated. A field trip demonstrated the effects of poor sprayer operation on weed control. (Photo by Eustace)

Featuring — IN-SERVICE EDUCATION