Stories
In Pictures

GILBERT S. GUILLER
Ohio State University

Guldenburg, Maryland Vocational Agr. students complete a landscaping unit and planting arboretum on school grounds.
photo: J. Pope

Michigan Vo-Ag teachers learn cherry tree propagation facts for reforestation lesson as a part of a recent seminar.
photo by Timmes

Rhode Island teachers of Agriculture are shown entering the frame for a pests greenhouse at their Annual Convention. The complete exhibit effectively pointed out the rapidly increasing importance of pest science in the agricultural education program of the Northeast. Left to right: John F. Leat, Smith, Saukville High School, Saukville; John H. Ball and Alberta Christopherson, Johnson High School, Coventry.

Voc. Agr. students of Holland, Minnesota are putting classroom instruction into practice. These students are working on a field assignment. A text book is open on one of the students.

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

Featuring—

EVALUATING THE YEAR'S WORK
The professional journal of Agricultural Education. A monthly publication managed by an Editorial Board and published by Interstate Printers and Publishers, Danville, Illinois.

EDITORS-MANAGING BOARD

MANAGING EDITORS
Cory Sneedahoe, North Carolina State University, Raleigh, Editor. Ralph J. Wooldred, Ohio State University, Columbus, Consulting Editor.

SPECIAL EDITORS
T. L. Fedders, Utah State Department of Education, Montgomery, Alabama, Building Manager.

REGION I
Cafe D. Western, State Department of Education, Manhattan, Kansas.

REGION II
Dave M. Love, Pennsylvania State University, University Park.

REGION III
George W. Wiegand, University of Tennessee, Knoxville.

REGION IV
Hugh G. Jones,attro State University, Louisville, Kentucky.

REGION V
M. M. Hunter, Ohio State University, Columbus, Ohio. Harold Berglund. State Department of Education, Springfield, Illinois.

REGION VI
Raymond A. Wood, Kansas State University, Manhattan, Kansas.

REGION VII

REGION VIII
James C. Diehl, State University of Iowa, Iowa City, Iowa.

REGION IX
D. E. K. Davidson. New Mexico State University, Las Cruces, New Mexico.

REGION X
D. M. McCollom, University of California, Davis, California.

EDITORIALS
Volume 38, June, 1966
Number 12

TABLE OF CONTENTS

- Editorsials........................................... 267, 268
- Theory and Practice................................... 267, 268
- News and Views....................................... 268
- Letters to the Editor................................. 268
- Evaluating the Year's Work.......................... 269
- C. W. Crawford
- Evaluation: Teacher Rating by Pupils.............. 270, 271
- N. E. Kullberg
- Follow-Up Study Indicates Vo-Ag Training Valuable.................... 271, 275
- B. C. Bass
- Teachers Key Men in Recruitment Drive.............. 272, 273
- Ralph J. Wooldred
- Good Record of Employment.......................... 274, 275
- E. M. Juergenson
- New Classroom Designed to Alleviate Nationwide Shortage........... 275
- More Skilled Agricultural Technicians Are Needed....................... 276-278
- Walter J. Brooking and N. R. Hunsecker
- A Look at Safety Through Safety Glasses............... 278, 285
- Thomas A. Hepner and Donald L. Ahrens
- Administration and Supervision........................ 286, 287
- Theodore Bolte and Joe P. Boll
- Themes for the Agricultural Education Magazine.................. 288
- Book Reviews........................................ 288, 289
- Gay E. Timms and T. F. Miller
- Stories in Pictures..................................... 293
- Gilbert Gulker

Evaluating Is Not Easy

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

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

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

The other born of the dilemma is not so easily handled. Suppose that you want to take a much broader look at evaluating an educational program. That you do not have a preconceived notion of what is to be measured, the problem becomes one of measuring an educational program. That is, the reference to the "standards" of certain vocational education programs. Perhaps the key here would be the pragmatic test of how well the student is satisfied with their educational program and how well it is serving the purpose for which each person enrolled in the program. This is an "open-ended" approach compared with the preceding approach. Even here, there must be something very well defined concept of what should be served. What should be the evaluation? Some research indicates that percent should be associated with the establishment and development of a vocational program. This has probably been observed on many occasions. Apparently, if we are closely associated with the programs we have so much self-interest invested until we are not objective enough to make an effective evaluation. What does this say to the teacher of vocational agriculture? To the supervisor, especially the district supervisor? The teacher educators? Maybe we are not as good at evaluating programs of vocational agriculture as we think.

Institutionalization

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

(Continued, page 268)
Letters to Editor

Dear Mr. Scarborough:

I would like to comment on your article, "What I Expect from My Professional Magazine." As a sociologist, I have been no less interested in those thought-provoking articles than any of my professional colleagues. My Magazine has always been a source of inspiration and motivation for me. I believe that it is an essential tool for anyone interested in the field of sociology.

Yours sincerely,

[Signature]

Editor's Note:

G.K. Werner, 80-90s Editor of the Agricultural Education Journal of America.

Evaluating the Year's Work

C. W. Crawford, Yo Ag Teacher, Millville, Alabama

No doubt all Vocational Agriculture teachers have procedures by which they evaluate their vocational agriculture programs. These procedures provide teachers with fairly conclusive evaluations. However, the following procedure may be of interest.

1. The teacher will evaluate the program on a continuous process basis. It will be based on the teachers' perceptions and student feedback.
2. The teacher will evaluate the program on a periodic basis, such as at the end of the semester or year. This will be based on formal evaluations and student assessments.
3. The teacher will evaluate the program on a summative basis, such as at the end of the program. This will be based on formal evaluations and student assessments.

These procedures will provide teachers with a comprehensive understanding of the effectiveness of their programs.

EVALUATING THE YEARS WORK

1966 - 1970

A. ALL DAY BOYS

1. Get ready early in the day for the program.
2. Keep the program interesting.

B. AGRICULTURAL FARMERS

1. Have good, well-run programs.
2. Keep the program interesting.

C. FFA

1. Get more boys in the program.
2. Keep the program interesting.

D. DEPARTMENTAL IMPROVEMENT

1. Keep buildings and equipment in good repair.
2. Add additional equipment as needed.
3. Improve facilities and equipment.

C. W. Crawford, Yo Ag Teacher, Millville, Alabama
Evaluation-Teacher Rating
By Pupils

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

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

EVALUATING TEACHERS

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

PUPILS EVALUATE

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

THE CRITERIA

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

1. To what extent does this instructor stimulate intellectual curiosity?
   - To an exceptional extent
   - To a great extent
   - To a reasonable extent
   - No interest

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

3. What is your reaction to this instructor’s speech?
   - Exceptionally distinct and pleasant
   - Fairly distinctly clear and pleasant
   - Not distinctly clear and pleasant

4. To what extent does this instructor create student interest?
   - Always arouses keen interest
   - Usually arouses interest
   - Occasionally arouses interest
   - No interest

5. How well do you feel this instructor organizes his course?
   - Very well organized
   - Well organized
   - Very poorly organized
   - No organization at all

6. To what extent does this instructor make you think?
   - Always makes you think
   - Usually makes you think
   - Occasionally makes you think
   - Never makes you think

7. How well does this instructor present this course content?
   - With exceptional clarity and enthusiasm
   - With normal clarity and enthusiasm
   - Poorly presented
   - Unpresentable

8. How effectively does this instructor enable you to understand the subject?
   - Exceptionally effective
   - Very effective
   - Reasonably effective
   - Not effective

9. In your judgment does this instructor seem to have a thorough knowledge of this and related fields?
   - Very well
   - Fairly well
   - Poorly
   - Unknowledgeable

10. Does this instructor exercise "humor" effectively?
    - With extraordinary success
    - With little success
    - With great success
    - With little success

11. To what extent do examinations stimulate thinking?
    - Requires much thought
    - Requires little thought
    - Requires no thought

12. What is your reaction to this instructor’s grading system?
    - Very fair and readily understood
    - Fairly and readily understood
    - Reasonably fair and understandable
    - Unfair and confusing

Follow-Up Study Indicates VO-AG Training Is Valuable

B. C. BASS
Teacher Education, Virginia Polytechnic Institute

Knowledge of what occupations former students entered after they completed their education at agricultural schools can help establish the value of the training provided to vocational agriculture and provide guidelines for planning instructional programs to fit the needs of students who are enrolled in high school. This line of thinking prompted J. M. Campbell, State Supervisor of Vocational Education in Virginia, to assemble and analyze data pertaining to students who completed three or more years of vocational agriculture and who were graduated from or left high schools in Virginia during the school years ending June 30, 1965. The occupational status of 1,289 former students of vocational agriculture was studied. (See Table I.)

The Findings

One-fourth (25.34 percent) of the former students were in salaried positions, more than one-third (34.90 percent) were in self-employment, and less than one-fourth (22.77 percent) were employed in occupations not related to the training they had received in vocational agriculture. A total of 93.23 percent of those students who were not available for placement and 62.91 percent who were employed or available for employment.

Of the 1,289 former vocational agriculture students who were employed or available for placement, more than one-fourth (25.34 percent) were farming; two-thirds (18.51 percent) were employed in other occupations; one-third (37.21 percent) were employed in occupations related to the training they had received in vocational agriculture; and less than one-fourth (22.77 percent) were employed in occupations not related to the training they had received in vocational agriculture. A total of 93.23 percent of those students who were not available for placement and 62.91 percent who were employed or available for employment.

TABLE I

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total former</td>
<td>1,289</td>
<td></td>
</tr>
<tr>
<td>Vocational agriculture students</td>
<td>312</td>
<td>24.34</td>
</tr>
<tr>
<td>a. In farming</td>
<td>172</td>
<td>13.60</td>
</tr>
<tr>
<td>b. In other agriculultural occupations</td>
<td>140</td>
<td>10.72</td>
</tr>
<tr>
<td>c. In occupations related to training in Voc. Agric.</td>
<td>177</td>
<td>13.87</td>
</tr>
<tr>
<td>Total employed full time (98, 6, and 5)</td>
<td>535</td>
<td>41.86</td>
</tr>
<tr>
<td>Total employed part time</td>
<td>157</td>
<td>12.07</td>
</tr>
<tr>
<td>Total employed (98, 6, and 5)</td>
<td>692</td>
<td>53.93</td>
</tr>
<tr>
<td>Former students unemployed (not included)</td>
<td>125</td>
<td>9.66</td>
</tr>
<tr>
<td>Former students whose occupations not known</td>
<td>12</td>
<td>0.93</td>
</tr>
</tbody>
</table>

(Continued, page 275)

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

CONCLUSIONS

The teacher’s instruction needs to be evaluated periodically just as the pupils work needs evaluation. Students should be helped to the teacher measure his growth and make improvement in his instruction if they are given the opportunity to do so. Do we want the truth about ourselves? If so, let’s get the opinions of students as well as the opinion of administrators and others. Then, when we get the answers, let’s make the necessary steps to be sure the teacher is benefited.

N. K. QUARLES
(Continued from page 270)
Teachers Key Men In Recruitment Drive

RALPH J. WOODIN, Teacher Education
The Ohio State University

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

Anticipating a shortage of teachers of vocational agriculture, the executive committee of the Agricultural Division of the American Vocational Association appointed a committee on Professional Personnel Recruitment in July of 1965. This committee includes: Walter Bussell, Past President, NVATA; Banger, Michigan; G. M. Botto, State Supervisor, Franklin, Ken- tucky; Dr. Leroy J. Davis, Director, Department of Agricultural Education, Clemson, South Carolina; C. C. Founette, State Supervisor, To- peka, Kansas; Weynor Smith, Past President of NVATA, Salisbury, Pennsylvania; and the writer who is Chairman of the Committee. The committee has studied the school situation in the following areas:

- Recruitment
- Assistance for Teachers
- The committee recognizes the importance of agricultural education in the key years of any effort to attract capable young men into the profession.

Plans were then made to supply every teacher in the nation with the need for information and to provide him with some materials to help him in this effort. As a first step, each state was asked to office a Commission for Recruitment in Agricultural Education as a part of the state teachers association. These commissions are to develop coordinated recruitment programs for each state.

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

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

Children of the Nation, 1966

Estimation of the number of students who are being asked to participate in the recruitment drive.

- Kind of Position
- Number of Positions
- Total

- Teacher of Agricultural Technician, High School
- Teacher of Agricultural Technician, High School plus Adult and/or Young Farmers
- Teacher of Disadvantaged Youth in Agriculture—High School
- Teacher of Off-Farm Agricultural Occupations—High School
- Teacher of Adult Farmers or Young Farmers (DN)
- Teacher of Agricultural Technician, Post High School
- Teacher of Manager in Agriculture

1966-67
79
395
20
117
75
65
70
15
1154
1229
1471
395

The Agricultural Education Magazine, June, 1966

GOOD RECORD OF EMPLOYMENT
E. M. JUERGENSON, University of California, Davis

Emphasis has been placed on the number of students who received job offers in their classrooms and supervised practical work. The question arises as to how many of these students are receiving in any occupational training or sponsorship. With this concern in mind, an investigation was made by E. M. Juergenson of the Department of Agricultural Education, University of California, Davis, in a number of Northern California high schools used for preparing teachers of agriculture. Sixteen schools were asked to cooperate in an occupational status—survey of teachers of vocational agriculture departments for the past 5 years. Schools were asked to distribute a mail-out survey to all students who took agricultural education and to follow up those students who did not respond.

Schools were asked to collect occupational data, and the Department of Agricultural Education, University of California, Davis, would analyze the results. All schools that would assist him in this effort. As a first step, each state was asked to office a Commission for Recruitment in Agricultural Education as a part of the state teachers association. These commissions are to develop coordinated recruitment programs for each state.

Through the cooperation of two national agricultural firms, periodical materials including a bulletin board for the state Better poster have been prepared and are being sent to each teacher of vocational agriculture. Plans for recognizing Teachers of Teachers through a special certificate to be presented at this year’s summer conferences in another part of the plan. The committee believes that if all of these efforts are carried out in cooperation with others engaged in recruitment for the college of agriculture that an adequate supply of teachers can be obtained.

(Continued from page 274)

(Continued from page 273)
E. M. Juergenson  
(Continued from page 274)

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

Undoubtedly, many graduates of a department fail to respond to the questionnaire, so our responses are not statistically large enough to indicate trends. However, in several schools there is little difference between agriculture and non-agriculture as to the occupation entered by graduates of vocational agriculture classes. In 128 out of 153 cases, students completed 3 or 4 years of agriculture, so agriculture was definitely a major subject in school.

Vu Ag O.K.

Supporting the idea that students would take agriculture again if they were starting high school again, was their reaction to the question concerning the value of agricultural classes. Regardless of whether or not students entered agriculture as a career, they were enthusiastic regarding the value of vocational agriculture classes. Only 14 students said they would not enter agriculture if starting high school again, while 128 indicated they would.

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

Leadership Training

In answer to the question whether a-organization and leadership training that you have received in your educational agriculture courses have helped you in your other school work, club work, and your job? 3 said that it was very helpful and 3 said it was of no value. This information is summarized in Table 4 and is a tribute to the quality of instruction taking place in the cooperating schools.

B. C. Boss  
(Continued from page 277)

employed or available for employment were employed full time and an additional 1,775 per cent were employed part-time. The employment status of twelve (8.9 per cent) of the students was unknown and 35 (2.61 per cent) of the students were unemployed.

The former students who were farming plus those employed in other agricultural occupations totaled 1,135, and this is one-fourth (25.0 per cent) of the 1958 included in the study. Sanders, who made a follow-up study in 1959 of 76,554 farmer students who studied vocational agriculture one or more years in Virginia schools from 1918 through 1959, found that one-fourth (25.06 per cent) of them were farming or in occupations related to farming. He also found that somewhat higher percentages (28.38 per cent and 32.11 per cent) of those who studied vocational agriculture three and four years respectively were farming or in related occupations.

Interpretations

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

1Harry W. Sanders, "A Follow-Up Study of Students of Vocational Agriculture," Virginia Agricultural Experiment Station technical report 1959, 1959, 14 p. Department of Vocational Education, Virginia Polytechnic Institute, Blacksburg.
More Skilled Agricultural Technicians Are Needed

WALTER J. BROOKING
Technical Education Specialist

H. N. HUNSCICHER
Agricultural Educational Services
State Vocational Services Branch
U.S. Office of Education

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

Agricultural Technicians: What They Do

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

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

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

Agricultural technicians work in the following general types of activity:

A. Research and development in all branches of science and production as they are applied to agricultural problems.

B. Production and related phases of agricultural crops and products; also the culture and conservation of beneficial wild life, grass lands, inland waters, and other agricultural resources; the production and processing of farm produce; and the management and operation of machinery and equipment, of supplies such as seed, fertilizers, feed, planting, breeding stock, pest, and other sources as needed for production, processing, and marketing of farm products.

The Federal Government funds research and development of agricultural research and development projects. However, much of the research and development is conducted in institutions of higher education, in private industry, and in the government.

O.R.H. First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Botany</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Introduction to Ag</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Soils and Nutrition</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Agronomy</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>81</td>
</tr>
</tbody>
</table>

O.R.H. Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agronomy</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Soil Management</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Farm Economics</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>81</td>
</tr>
</tbody>
</table>

This O.R.H. curriculum is designed to provide a foundation for students who wish to pursue a career in agriculture. It is divided into two semesters and is offered in all states. The curriculum includes courses in general botany, introduction to agriculture, soils and nutrition, agronomy, and soil management.

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

Agricultural Technicians: What They Do

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

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

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

Agricultural technicians work in the following general types of activity:

A. Research and development in all branches of science and production as they are applied to agricultural problems.

B. Production and related phases of agricultural crops and products; also the culture and conservation of beneficial wild life, grass lands, inland waters, and other agricultural resources; the production and processing of farm produce; and the management and operation of machinery and equipment, of supplies such as seed, fertilizers, feed, planting, breeding stock, pest, and other sources as needed for production, processing, and marketing of farm products.

The Federal Government funds research and development of agricultural research and development projects. However, much of the research and development is conducted in institutions of higher education, in private industry, and in the government.

O.R.H. First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Botany</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Introduction to Ag</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Soils and Nutrition</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Agronomy</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>81</td>
</tr>
</tbody>
</table>

O.R.H. Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agronomy</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Soil Management</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Farm Economics</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>81</td>
</tr>
</tbody>
</table>

This O.R.H. curriculum is designed to provide a foundation for students who wish to pursue a career in agriculture. It is divided into two semesters and is offered in all states. The curriculum includes courses in general botany, introduction to agriculture, soils and nutrition, agronomy, and soil management.

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

Agricultural Technicians: What They Do

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

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

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

Agricultural technicians work in the following general types of activity:

A. Research and development in all branches of science and production as they are applied to agricultural problems.

B. Production and related phases of agricultural crops and products; also the culture and conservation of beneficial wild life, grass lands, inland waters, and other agricultural resources; the production and processing of farm produce; and the management and operation of machinery and equipment, of supplies such as seed, fertilizers, feed, planting, breeding stock, pest, and other sources as needed for production, processing, and marketing of farm products.

The Federal Government funds research and development of agricultural research and development projects. However, much of the research and development is conducted in institutions of higher education, in private industry, and in the government.

O.R.H. First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Botany</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Introduction to Ag</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Soils and Nutrition</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Agronomy</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>81</td>
</tr>
</tbody>
</table>

O.R.H. Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Hours</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agronomy</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Soil Management</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Farm Economics</td>
<td>3</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>27</td>
<td>81</td>
</tr>
</tbody>
</table>

This O.R.H. curriculum is designed to provide a foundation for students who wish to pursue a career in agriculture. It is divided into two semesters and is offered in all states. The curriculum includes courses in general botany, introduction to agriculture, soils and nutrition, agronomy, and soil management.
Brooking and Hunsicker (Continued from page 277)

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

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

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

What Special Agricultural Technologies Should Be Taught?

The field of applied science is so broad in agriculture and its related areas that training of technicians for agriculture must be directed toward specified occupational objectives. The identification of a specific area as an educational objective is an essential initial step.
The Agricultural Education Magazine, June, 1969

Page 281

A poor program is by far the most expensive of all because it costs almost as much money, wastes the time and the effort of students, and the worst of all, disadvantages potential employers and disfrunti students and their parents. Programs of less than high quality cannot be afforded.

To add curricula for agricultural technicians training in nutrition which already offers some programs in technical education is usually justified only in programs where no technical education is being offered. The life science laboratories for health are not greatly different, but the chemistry and physics laboratories for engineers and the communications technology can be used with little or no modification other than added equipment for teaching certain aspects of the agricultural technologies. The library and its staff already exist and only the addition of the agriculture-related information. Staff for teaching communication skills, technical reporting, husbandry economics, mathematics, and government and human relations are already present. The program by slanting the courses to whatever degree is needed for agricultural technicians is possible.

For Adult Evening Classes Too

The establishment of high quality programs for educating vocational technicians has been divided by providing facilities for occupational up-grading programs for employed people of all ages. Experience has shown that most schools which offer these programs have also needed to accommodate adults in special courses who do full time young people in contemporary technician curriculums.

The evident need at the present time is to improve new ones where the population, the environment, the technology, the socio-economic, and the government and administrative district sincerely dedicated to quality occupational education is essential. It takes a minimum of five years and many thousands of dollars to establish a new program. It is the duty of the state education assembly to equip facilities, and graduate the first class or two. When these graduates are successfully employed and confidently advertising their success to their peers and parents, the program is well started.

The Agricultural Education Magazine, June, 1969

Page 280

Brooking and Hunsicker (Continued from page 279) "versities,technical schools, and area vocational-technical schools are the institutions in which the greatest growth is taking place. Technical and comprehensive high schools also offer such programs; and their orientation toward the needs of technical and related vocational education is of great importance. Since these programs must prepare students to enter technical education programs either directly or after high school or after graduation from high school.

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

It is to these institutions that the last few years have increased the enrollment in agricultural education. The community college system is rapidly expanding due to a variety of reasons. It is a system that can be tailored to the needs of the various communities. It is not only for the enrichment of the mind but it is also for the preparation for the world of work. It is a system that can be adapted to the needs of the communities and to the needs of the students. It is a system that can be expanded to meet the needs of the students.

Divisions of four-year colleges with extension services and community colleges also have considerable potential for developing good technical education in community colleges, and the need for larger numbers of skilled agricultural technicians is tremendous due to the anticipated growth of the agricultural industry.

The need for educating high quality vocational and technical education has been supported by Federal legislation under Title VIII of the National Defense Education Act of 1965. Its purpose was to train persons who would be able to perform the functions of specialized technicians. The provisions were not generally interpreted to include agricultural technicians, but the experience during the several years since 1965 has done much to demonstrate the need for technicians in all fields of applied science, including agriculture, and to prepare the way for the initiation of agricultural technician preparatory programs.

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

In recognition of the growing importance of educating persons for gainful employment, the Congress enacted the Vocational Education Act of 1963, which substantially increased funds for vocational and technical education for greater vocational education through an expanded program, increased technical training for agricultural and other technical sciences is possible and encouraged.

Funds under the Act of 1965 may be used under certain conditions for construction of new agricultural educational facilities, as well as for teacher salaries, laboratory equipment, and supplies. The Act requires that funds be used under certain conditions for construction of new agricultural educational facilities, as well as for teacher salaries, laboratory equipment, and supplies. The Act requires that funds be used under certain conditions for construction of new agricultural educational facilities, as well as for teacher salaries, laboratory equipment, and supplies. The Act requires that funds be used under certain conditions for construction of new agricultural educational facilities, as well as for teacher salaries, laboratory equipment, and supplies. The Act requires that funds be used under certain conditions for construction of new agricultural educational facilities, as well as for teacher salaries, laboratory equipment, and supplies.
Classes Help Adults Upgrade Their Horticultural Jobs

PETER WOTOWIEC, Teacher of Vocational Horticulture
Cleveland, Ohio

and

RAUL J. WOODIN, Teacher Education, The Ohio State University

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

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

County Study

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

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

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

Needed Adjustments

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

A typical course outline is shown below.

<table>
<thead>
<tr>
<th>CLEVELAND PUBLIC SCHOOLS COURSE OUTLINE FOR LANDSCAPE DESIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session</strong></td>
</tr>
</tbody>
</table>

**TABLE 1**

<table>
<thead>
<tr>
<th>Area of Horticultural Knowledge</th>
<th>Garden Equipment and Supply</th>
<th>Nursery</th>
<th>Landscaping</th>
<th>Vegetable Greenhouse</th>
<th>Floral Greenhouse</th>
<th>Golf Course</th>
<th>Other</th>
<th>Total</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horticulture and Pest Management</td>
<td>1.78</td>
<td>2.03</td>
<td>2.32</td>
<td>2.02</td>
<td>2.02</td>
<td>2.10</td>
<td>2.10</td>
<td>2.40</td>
<td>1</td>
</tr>
<tr>
<td>Irrigation and Maintenance</td>
<td>2.37</td>
<td>2.02</td>
<td>2.20</td>
<td>1.70</td>
<td>2.02</td>
<td>1.73</td>
<td>1.93</td>
<td>2.34</td>
<td>2</td>
</tr>
<tr>
<td>Hardscaping</td>
<td>1.70</td>
<td>1.99</td>
<td>2.25</td>
<td>2.13</td>
<td>1.80</td>
<td>1.93</td>
<td>1.93</td>
<td>2.19</td>
<td>3</td>
</tr>
<tr>
<td>Landscape Design</td>
<td>2.20</td>
<td>1.95</td>
<td>2.06</td>
<td>1.13</td>
<td>1.78</td>
<td>1.56</td>
<td>1.89</td>
<td>2.11</td>
<td>4</td>
</tr>
<tr>
<td>Horticulture and Pest Management</td>
<td>2.12</td>
<td>2.02</td>
<td>1.26</td>
<td>1.98</td>
<td>1.75</td>
<td>2.10</td>
<td>1.86</td>
<td>2.11</td>
<td>4</td>
</tr>
<tr>
<td>Irrigation and Maintenance</td>
<td>1.82</td>
<td>1.82</td>
<td>1.85</td>
<td>1.85</td>
<td>2.00</td>
<td>1.88</td>
<td>1.75</td>
<td>1.95</td>
<td>4</td>
</tr>
<tr>
<td>Horticulture and Pest Management</td>
<td>2.10</td>
<td>2.43</td>
<td>2.43</td>
<td>2.13</td>
<td>1.79</td>
<td>1.83</td>
<td>1.93</td>
<td>2.02</td>
<td>6</td>
</tr>
<tr>
<td>Landscape Design and Construction</td>
<td>1.20</td>
<td>1.60</td>
<td>1.20</td>
<td>1.30</td>
<td>1.80</td>
<td>1.57</td>
<td>1.70</td>
<td>1.93</td>
<td>2</td>
</tr>
<tr>
<td>Irrigation and Maintenance</td>
<td>1.40</td>
<td>1.57</td>
<td>1.57</td>
<td>1.72</td>
<td>2.02</td>
<td>1.32</td>
<td>1.66</td>
<td>1.96</td>
<td>3</td>
</tr>
<tr>
<td>Horticulture and Pest Management</td>
<td>1.80</td>
<td>2.02</td>
<td>2.02</td>
<td>1.50</td>
<td>1.87</td>
<td>1.56</td>
<td>1.97</td>
<td>2.19</td>
<td>4</td>
</tr>
<tr>
<td>Irrigation and Maintenance</td>
<td>1.65</td>
<td>1.80</td>
<td>1.57</td>
<td>1.08</td>
<td>1.97</td>
<td>1.98</td>
<td>1.85</td>
<td>1.92</td>
<td>5</td>
</tr>
</tbody>
</table>

Rapid Expansion

Horticulture is a rapidly expanding facet of agriculture. It is closely connected with the surrounding population of the United States which between 1950 and 1960 increased 15.5%. Since this increase in the horticulture business can be expected to continue, the demand for horticultural employes will rise. As technology progresses, present and future horticultural employes can be expected to improve their skills through instruction and upgrade themselves in their vocations. Continuing study of employes should help make adult instruction in horticulture of maximum value.
A Look At Safety Through Safety Glasses

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

Editor's Notes: The authors combined experiences of four years teaching vocational agriculture and seven years teaching this article.

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

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

State Laws

Recently a number of states have passed laws related to the wearing of protective eye devices by students and teachers. For example, the State of Iowa's last General Assembly enacted a law stating that every student and teacher in any public school with vocational agricultural buildings, must wear protective eye devices when participating in any phase of activity which may subject the teacher or to the risk or hazard of eye injury from materials or processes used in such courses. Working with any of the following would warrant the wearing of these devices: hand tools, gas welding, cutting, filing, grinding, or stamping of any solid material, heat treatment, tempering, or kiln firing of any metal or another material, gas or electric arc welding, using caustic or explosive or any vehicle while in the shop. Despite the law, we and our students have worked in the above conditions since the beginning of the vocational agriculture program, it is interesting that we did not become concerned about eye safety until a law pertaining to such was passed. Now that we must require eye protection devices to be worn, many questions come to mind such as: type to wear, method of storing, sharing of glasses by students, and who should purchase the safety glasses? The following are some recommendations that should help to answer some of the questions that you have been or will be faced with in the near future.

Types Available

As illustrated below, there is a wide variety of types, styles and sizes of eye protection devices available to use in safety programs. Two general types are pictured, namely, the goggle type, with a nose bridge, and the mask type. The mask type protects, generally, a small area but is effective in the shop. The goggle type is effective in various conditions where heavy grinding or filing is being done, are welding, or in working with hot metal tools. They are the least expensive of the types pictured.

Type Recommended

The spectacle type, through the most expensive, would be recommended over the goggle type glasses for use in vocational agriculture. They are generally the most comfortable for the wearer, are small and easy to store, can be used under and are welding helmet, and cause less interference to the wearer's vision. The recommended protection for the student who wears prescription glasses that do not fit properly or the tempered lens would be the larger bulky type goggles. All glasses shown in figure 1 meet the requirements as established in the previously mentioned law.

(Continued on next page)

The Agricultural Education Magazine, June, 1969

(Continued from page 284)

The various temple or brow styles that one might select when ordering the safety glasses are pictured to the right. Temple number 1 illustrates an adjustable cable type, number 2 the panel or spatski bow, and number 3 a straight bow. All of these temple styles can be ordered in various lengths. Of the different temple styles, the cable type would probably be best suited for the agricultural mechanics laboratory. This bow wraps around the individual's ears and tends to keep the glasses in place in most working positions. Also, they can be adjusted to fit the wearer by bending the temple tips. Another factor to consider when ordering safety glasses is the type of face shield. A "semi" shield is pictured on the first pair of safety glasses at the right. This shield would protect one from objects entering from the side; however, it does not wrap around the face completely such as the side shield shown on pair number 2. This type along with the type illustrated on number 3 is called the "full" shield. These would give the wearer the most protection since they tend to keep the face area clean. The "full" side shield can be plastic as shown in pair 3 or the wire mesh as illustrated in pair 2. When ordering be sure to include all specifications as recommended by the various manufacturers.

Storage of Glasses

A very important phase of this program is the storage of the eye protection devices. The storage unit pictured in figure 4 is an example of a way to store the glasses. Each compartment allows adequate space for ease of access. For the spectacle type the compartment is 3" x 9" while for the larger goggle types the compartment is 4" x 6" recommended. The compartments are 3 inches in length. All of them are felt lined for maximum protection of the glasses. Storing the glasses either placing or removing from the storage unit each compartment should be numbered in the same space provided for each student.

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

Sharing Glasses

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

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

Administration and Supervision

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

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

Some Resist Change

Students of American agricultural education are alert to the problems manifested by the adjustment to change, and these changes are not being experienced for the first time. The State has resisted change when resistive improvements in the educational and teaching skills and knowledge have been made which signal change. The consideration arrived at by staffs is that holding the "line" in the rapid succession of legislative Acts is the only possible position that can be tenable.

Yet, the policy implications of these are very deep. The situation is now in nature, and their ramifications, if uncoupled, can cost the student and the staff alike dearly when both need all the support they can garner.

Operational Aspects of Current Administration and Public Supervision in Agriculture Education

The authors accept as prima facie evidence the limited documentation and personal discussions that "report writing activities" do indeed occupy a considerable amount of time in college staff offices. Even though it can be rationalized why a head state supervisor might have a genuine concern over these reports, the extensive amounts of time spent cannot completely justify the abandoning of the concept of a "total program." It is common knowledge that supervisors are spread quite thinly in some states. This bold condition, a grave lack in staff members and numbers, seems too self-evident to have been overlooked. Certainly without adequate staff little or no progress can be expected from a Bureau.

It is unfortunate indeed that the present generation of college teachers has grown up in an environment where State staffs have been underestimated and service provided has been limited, and as a consequence little is expected from them. This development, teaching and deploying skills and knowledge have been made which signal change. The consideration arrived at by staffs is that holding the "line" in the rapid succession of legislative Acts is the only possible position that can be tenable.

The eventual outcome is a matter. A man cannot be divided only so many ways. This should give us just cause for concern. A man loaded with the greatest number of responsibilities, such as the supervisor, is called for a special type of training. A man who does not generally exist in a formal college program, that is, a program thatpayment the expertise required of a man occupying such an important position.

Suggestions for the Improvement of Administrative Supervision in Agriculture

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

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

2. A re-examination of staff should be made with the expressed objective of eliminating the concept of "check overs." Further, only trained professionals in agriculture should be employed. Furthermore, workloads should more closely correspond to what can be accomplished in a quality not quantity manner. A new extended staff (incorporating existing staff) and tasks one supervisor must carry on is too likely to happen. Here a division of labor is called for.

In the future, a neat, concise, complete State report will not occur, cannot, perhaps, be expected, for judging the merit of a State program in agricultural education. It is the present that "needs" and there are reports, either with or without the curriculum material specialists should read.

(Continued on next page)

Themes for the Agricultural Education Magazine

The Agricultural Education Magazine, June 1966

Builen and Builen

(Continued from page 296)

bo appointed to work with teachers as consultants without other duties. Still further, program evaluation should be handled by another group of staff, the Bureau of Curriculum, that serves to present knowledge of all that should be utilized in the agricultural education process. This is a consultant. At that level, accepted, a more realistic coordination of activities in which one can make and handle the making of such personnel feasible.

3. A state of thought might be considered in the mutual assistance to professional problems and in the development of "teaching materials." This can be accomplished between adjacent states or at a national level of the Bureau. It is to be expected that these activities, wherein cooperation should be encouraged, will arise from certain teaching training facilities (college, staff and high school centers) to the development of integrating instructional materials such as the case in the Southern Region (originally through SCAV). It seems that cooperation with the development of the Agricultural Mechanics instructional materials is the first task of the Bureau. In adapting to existing administrative and supervisory structure the following suggestions are made:

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

2. A re-examination of staff should be made with the expressed objective of eliminating the concept of "check overs." Further, only trained professionals in agriculture should be employed. Furthermore, workloads should more closely correspond to what can be accomplished in a quality not quantity manner. A new extended staff (incorporating existing staff) and tasks one supervisor must carry on is too likely to happen. Here a division of labor is called for.

In the future, a neat, concise, complete State report will not occur, cannot, perhaps, be expected, for judging the merit of a State program in agricultural education. It is the present that "needs" and there are reports, either with or without the curriculum material specialists should read.

(Continued on next page)

PLANNING SUPERVISED PRACTICE FOR ALL STUDENTS

Emphasis on all students. Reports of programs designed for students with varying backgrounds in one form or another, have shown up the deficiencies of supervised practice. Relating supervised practice to teaching programs. Summer programs of supervised practice. Relationship to work experience programs.

October

IS ADULT EDUCATION GETTING LOST IN THE SHUFFLE?

We once said that there was no place for adult education in the educational system. It is time today to reconsider that position. Adult education is a vital element in any educational system. It is needed for personal growth and development. It is needed for social and economic progress. It is needed for the development of a literate society. We must give adult education the space and time it needs to grow and flourish.

November

OUR CHANGING ROLE

Are we still in the business of adult and young farmer education? Is there anything for us to do? Education of rural youth for the future is a task that must be given to adult education. Adult education must be involved in the development of programs that will meet the needs of young farmers.

Book Reviews


"Soil Science Simplified," in the words of the author, is a book that deals with the distillation of all soil science, written for those who want to get acquainted with the basic concepts and principles of soil science. It demands study for a long time and not just for an extensive study.

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

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

The author is a soil scientist at Purdue University.

Guy E. Timmons, Michigan State University


Much has happened in tobacco diseases in the seven years since Dr. George Lucas first published his book, Diseases of Tobacco and now a completely revised and enlarged edition has come out. Based on an outstanding pathologist, the book provides an excellent resource for agricultural education workers, teachers, and students seeking a single, authoritative, and comprehensive, and up-to-date source of information on tobacco disease. Moreover, the book is well organized and indexed, easy to read and understand. It is divided into parts on the basis of eight groups of tobacco diseases, i.e. fungus diseases, bacterial diseases and virus diseases. A chapter is devoted to each disease. Drawings, diagrams, and pictures are numerous and of excellent quality. Despite the depth of each disease, the writing is clear and concise and this is presented in this book. A glossary of important soil terms has been added to the current edition.

The author is a soil scientist at Purdue University.

Guy E. Timmons, Michigan State University