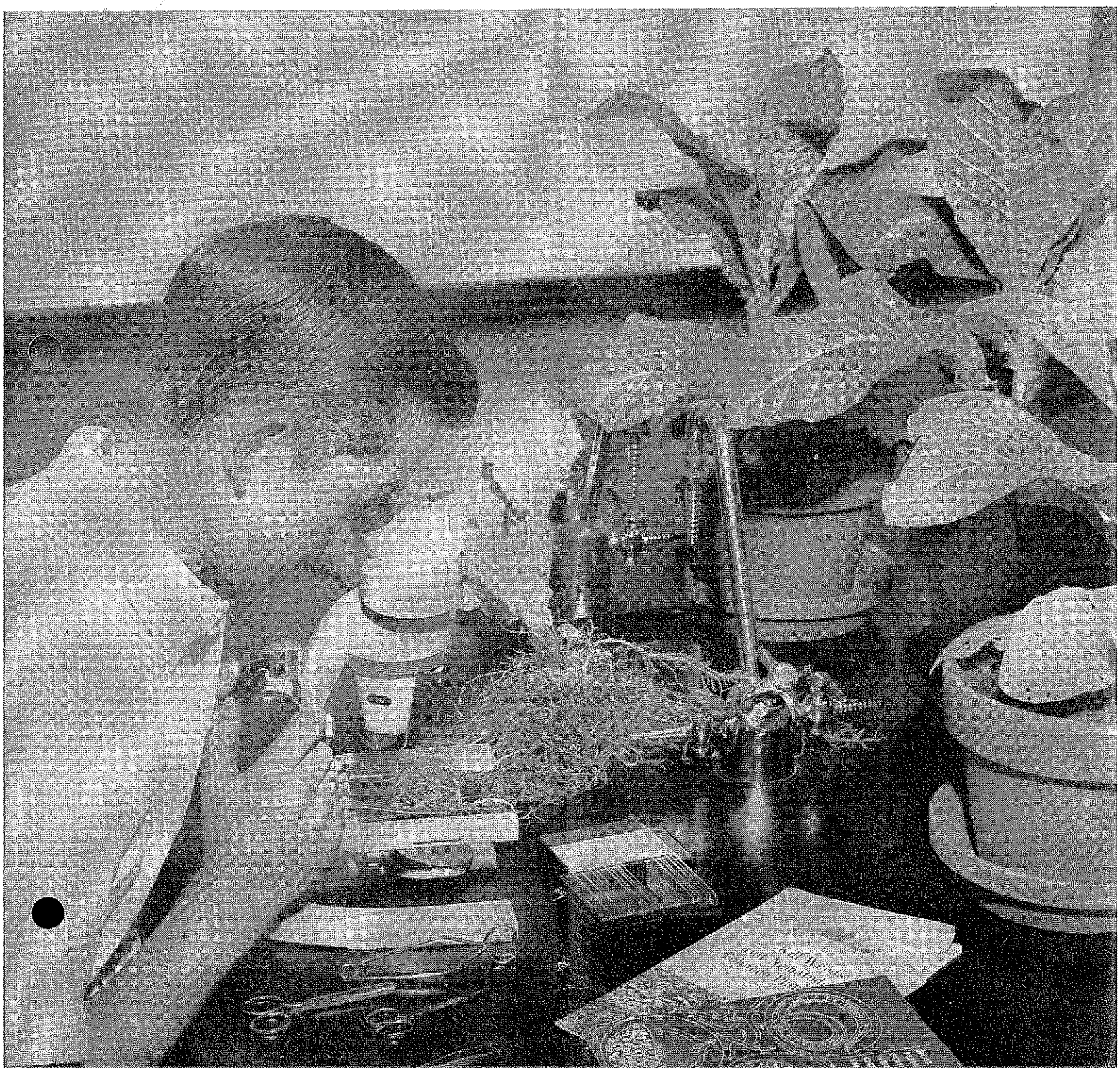
AGricultural EDucation

Featuring—Training Agricultural Technicians

NOVEMBER, 1963



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Control of insects and diseases is only one of the many subjects in agricultural chemicals which a technician must master. A student in the Lenoir Industrial Education Center in North Carolina learns to identify nematodes in tobacco.

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Guest Editorial

Wanted—Educational Inventors

GERALD B. JAMES and HARRY G. BEARD
Vocational Education, North Carolina

We have studied the industrial revolution that is sweeping across all occupational fields and the radical changes occurring in what it takes to get and keep a job. We know that jobs requiring specialized training are going begging while untrained and poorly trained workers glut the labor market, causing social and economic problems of huge proportions. Certainly, we appreciate the fact that agriculture is no exception. We are firmly convinced that modern agricultural work must involve scientific and managerial ideas, concepts, and understandings as well as manual skills. This being true, agriculture necessarily changes; it takes *new* forms and *new* functions; it moves toward "contract" and "specializations in function" and moves away from "sentiment," "economic isolation" and "economic independence."

In this day of automation and the mighty machine, and in the face of critical examination of vocational education, including self-examination, it is easy to take the fatalistic position of "machine over man"; it is easy to place machines and job demands ahead of students, relegating students to clay for the industrial mold. However, a moment of reflection brings a realization that man invented these machines and jobs, and that man is determined to use, to improve, and to continue inventing machine and jobs, and to continue enjoying productive efficiency. We refuse to consider going back to "the good old days." A bit more reflection on this point reveals the great challenge educators have to invent better educational opportunities for *people*—to delve into problems of teaching–learning with the same enthusiasm shown by other inventors. Human potential is not a practical limitation.

There are several problem areas in vocational education which are sorely in need of educational invention. Two of these which have particular relevance to training specialists will be mentioned here.

First, from the situations and viewpoints of students, how can the vast body of subject matter from the specialized and complex world of work be used by students (probably at the early high school level but certainly not restricted to this level), under teacher directed, student self-appraisal, so that students may truly see themselves and plan ahead to occupational fields and to educational opportunities? Clearly, the focus should be on the student. Emphasis should be given to helping students develop planfulness, not to

(Continued on next page)

From the Editors Desk

Technical Education Programs in Agriculture Are Needed

Several articles in this issue suggest that important pioneering work is being done in providing education for agricultural technicians by agricultural educators in a number of states. Carefully conducted research, close liaison with prospective employers, and specialized curricula taught by competent staff members have characterized these initial efforts. Carefully evaluated pilot programs are also a part of this newest departure in agricultural education.

The present national interest in vocational and technical education provides a favorable climate for an expansion of technical education in agriculture.

The President's Committee on Youth Employment makes this statement: "Today's youth are tomorrow's adults—production and service workers, technicians, professionals, clerks and managers—parents and heads of families. For most, their admission to this adult world, their badge of belonging, is a job. But it is much harder today for a boy or girl with limited education and training to get a job. The numbers of young people between 16 and 21 have increased greatly over the last generation because of the rise in the birth rate starting in the 1940's. The kinds of jobs they used to be able to fill are disappearing, and many of the jobs that are available demand much more skill and training than they now can offer."

Still another favorable factor is the experience gained by other vocational services, through the technical institutes, which have resulted from the National Defense Education Act.

The education of technicians in agriculture presents a new and important challenge to the agricultural education profession. For the individual who receives adequate education for a career as an agricultural technologist there are added opportunities for a life of service as well as higher monetary rewards than are available to the high school graduate. For employers in many agricultural businesses and organizations technicians can meet many needs brought about by an increasingly complex technology.

Farmers should benefit from the efforts of technicians who help provide needed services. Society stands to benefit both through the higher productivity of the individual and through more economical production of agricultural goods and services.

For all of the above reasons the time has come for each state to study its needs for agricultural technicians and to start developing educational programs for preparing them. □

Educational Inventors - - -

subject-matter *per se*.

Second, how can specialized education be provided, (perhaps largely after high school) to properly relate what someone has called the three "prior factors" in educational effectiveness: the situations of students (people), the job or a cluster of jobs (through which vocational program goals are derived), and the offerings of the school (educational program)? Traditional vocational education programs have barely scratched these surfaces.

Educational inventions are needed and must come under the firm conviction that the focus of any educational program should be upon students rather than upon a course. Vocational education is a process of development of individuals. Occupational acquaintance and exploration, preparatory and job training, placement, and continuing education are parts of this process. Such a process is necessarily *liberalizing* □

LETTERS

Sir:

I am in agreement with Carlton West in that we need to teach a student to analyze his own situation and weigh facts carefully before he adopts a recommended practice; however, I think two additional points should be emphasized: (1) we should teach our students to consider the source of the recommendation as carefully as the practice itself. (2) not all decisions upon recommendations are of the same magnitude; therefore, students must be taught to differentiate between major and minor management decisions.

It seems to me that a basic need is to teach students of the need for selectivity in even considering a recommendation. Is this a well proven good management practice with the anticipated outcome established by research and experimentation; or is it the advice of an itinerant seed peddler? Will the recommendations of the vocational agriculture instructor have greater validity than information from a current farm magazine? Free advice to farmers flows copiously and we must guide our students in selecting that which is valid.

The second consideration involves the magnitude of a recommended practice. How much time and effort should be devoted to studying the advisability of using a soil insecticide for corn? Is this the same type of decision as deciding how many dairy cows will yield the greatest labor income on a given farm? Both require decisions but the magnitude of the latter is deserving extensive study even though a recommendation of 30 or more cows per man is readily available. The importance of any management decision cannot be minimized but priority must be given to those that will have major import on the farm operation.

TED REDHAIR
Mexico, Missouri

Sir:

The article "Our Graduates Operate Dairy Farms" by Robert Mitchell is outstanding in identifying the fundamentals which assist young men to become established in farming. The realism of this teacher's program is impressive. The steps he has listed plus other essentials which he has described indirectly may serve as evaluative guidelines for other teachers.

By example, Mr. Mitchell has described a need in the present day for vocational teachers to help students develop a program which will result in achievement of realistic goals. He implies a need for an equity in farming by a graduating senior of sufficient scope to keep open the doors of choice for either farming or continuing education. To do this the teacher has used advancements in technical agriculture; explored available resources; enlisted school, parent and community support; and has worked these into program which grew rapidly with the physical, mental, and social development of his students.

Most significant is the view here that the high school provides a foundation for more effective work in young farmer class. In step number 5 he shows the genuine satisfaction found in young farmer work "because it is then he (the young man) needs help the most."

Although the past achievement at Ripley is impressive, a still brighter future is in prospect. The impact of established young men will multiply over the years to help the whole community face the future with confidence.

ELMER A. LIGHTFOOT
Lansing, Michigan

Sir:

At a state meeting of the NHVATA this week, a vote was taken relative to changing the name of the Agricultural Education magazine. The vote for New Hampshire was 50-50, an even split. However, the group did feel that if the magazine staff decided it was advantageous to change, we would support their decision.

EMERY P. BOOSKA
State President of NHVATA
Hudson, N. H.

Sir:

The article "Providing Occupational Experiences for Boys with Limited Opportunities" suggests an excellent plan for other states and individual Vo-Ag instructors to follow in an appraisal of their program.

The sad thing is when the instructor is unaware of the situation. Certain danger signs should be heeded, namely: 1. Decreasing enrollment; 2. Don't know-don't care attitude concerning the department; 3. Farm boys not enrolling in your program; 4. More of your time becoming available for activities outside of Agriculture. When these signs appear the Vo-Ag teacher must be the one to *appraise his own program.*

GORDON STRUBLE
Temperance, Michigan

Sir:

Reference is made to your editorial entitled "Farming Program not enough" in the September issue of the Agricultural Education Magazine. When my eye caught the title I eagerly looked through the article hoping to find some good, sound suggestions for supplementing farming programs but, with the exception of clarifying the legality of supervised experience in farm related occupations, I find nothing new.

We have always accepted non-farm students to vo-ag on the basis of their interest and their supervised work experiences have been on farms in the community or on school farms. Furthermore, I have every reason to believe that our teachers have made their student work experiences as realistic as possible in terms of changing patterns in farming and farm living. In fact, many of our good teachers have been meeting the needs of changing patterns before some of us in the state office recognized the changes. As you know, I do not share the enthusiasm of many of our colleagues for the healing powers of farm related occupations; although this avenue, if pursued cautiously, might provide some alternative opportunities for a few of our students.

May I add another supplement to your list, namely, that we encourage and make available to our students the opportunity to do research studies. These should be related to their vocational interests and could vary all the way from an experiment in crop varieties, to a community survey on needed farm building construction, to developing a low cost cattle guard. Such studies as a supplement to our program would help to develop and stimulate interest in a given vocation and, furthermore, would enable us to do an even better job of developing in our students "an inquiring mind."

HAROLD B. TAYLOR
State Supervisor
Indianapolis, Indiana

Sir:

Cayce Scarborough's article entitled "Farm Management for Whom?" caused me to do some thinking.

Economists define Farm Management as "the study of the operation and organization of a farm from the point of view of efficiency and continuous profits." Almost everything we teach in vocational agriculture is related directly or indirectly to this definition. In all of my teaching I have taught some farm managment and I expect to continue.

I am all for his idea of teaching adult classes during the daylight hours, but with a full program of high school vocational agriculture the only time left for adult classes is at night.

After teaching an average of 70 to 80 hours of evening classes per year for 17 years, many in the farm management field, I am convinced that a lot of good can be done thru evening classes.

RALPH S. PECK
Dewey, Oklahoma

Technical Education in the Agricultural Education Program

J. H. BLACKMON and C. G. Dawson, Consultants
Agricultural Technology Education, North Carolina

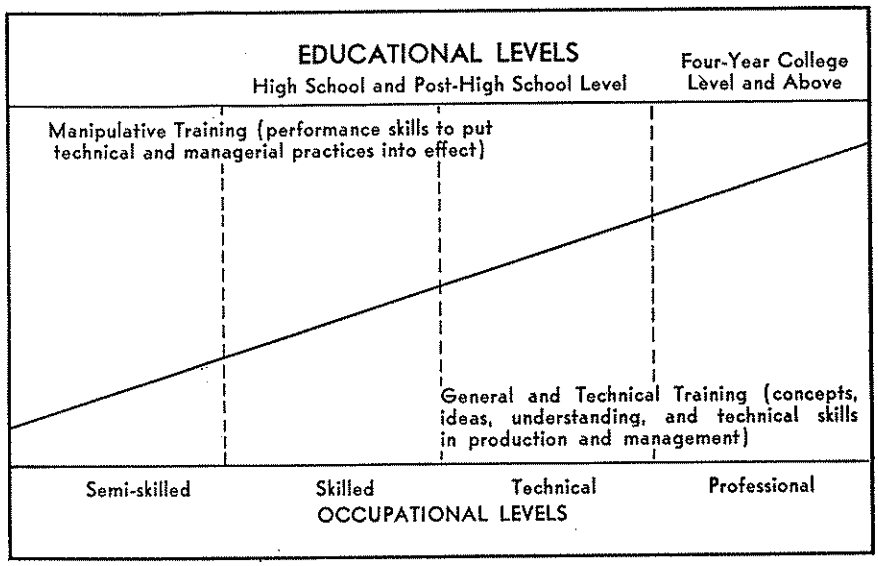
Rapid technological advances in the production and distribution of agricultural commodities and services are requiring more professionally trained people, more technicians and more skilled workers. The need for untrained workers in agriculture is fast disappearing. This accelerated trend toward more productive and efficient workers in agriculture is compatible with the trend towards more technical competence sweeping across all industrial activity.

Agriculture, an expanding and dynamic industry, is undergoing a technological revolution that is creating an urgent need for more highly trained workers. Agricultural workers in the future must possess greater technical competence.

Included in the agricultural work force are farmers, people who provide supplies and services to farmers, people who process and market farm products and professional agriculturists. With an expanding population (7,500 more mouths to feed each day), these agricultural occupations will continue to be an extremely important segment of our national economy.

The classification of agricultural occupations as semi-skilled, skilled, technical, and professional has important implications in terms of the nature of preparation and level of education required for various agricultural occupations. Greater emphasis is given to concepts, ideas and understandings than to manipulative skills in technical and professional education programs. The extent of this emphasis is depicted in Chart 1.

CHART 1. PROPORTION OF TWO TYPES OF TRAINING IN EDUCATIONAL PROGRAMS FOR DIFFERENT OCCUPATIONAL LEVELS[1]



High School Vocational Agriculture as Preparation for Technician Training

McLure and others[2] have reported that meaningful distinctions having to do with the organization and function of vocational and technical education are emerging. They propose that vocational education be considered as that which high schools are able to do in the way of formal occupational training—exploratory occupational experiences, systematic training for broad fields of work and limited specializations. Technical education would then be classed as the more specialized occupational training required beyond the high school, excluding professional training.

Using this terminology two problem areas, broadly conceived, in providing technical education in agriculture would be: one, the exploration, development of interests, guidance and counseling relative to technical education as a part of high school programs and development of appropriate technical preparatory high school curricula and two, the development of post high school technical curricula which relates the *student, the school, and the job.*

Our experiences during the past two years in a post-high school Agricultural Technology Education Program operated an integral part of the system of Agricultural Education in North Carolina (see chart 2) have emphasized the importance of the above problem areas.

Our efforts have created an awareness that the need for close, harmonious relationships in providing continuity of educational opportunities in agriculture is at the heart of many problems in providing technical education in agriculture.

High school Vocational Agriculture could be viewed as the base for and beginnings of specialized agricultural education, either semi-technical, technical or professional. Articulation of efforts is vital to all concerned.

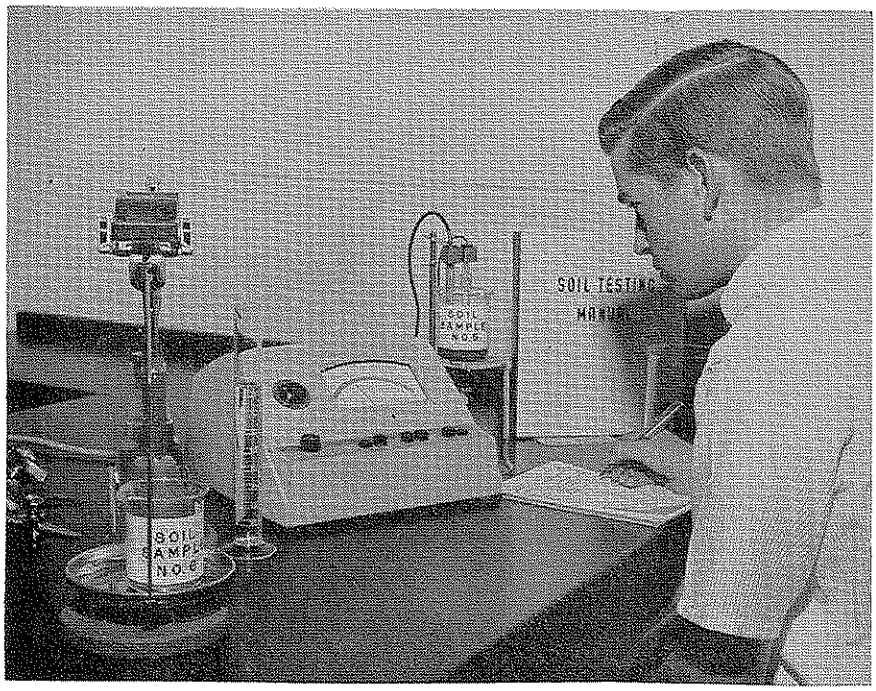
What are the implications for high school Vocational Agriculture in discharging its preparatory function for later specialized technical education in agriculture?

To us, some of these appear to be:

1. Revised objectives and philosophy to encompass all of the broad field of agriculture.
2. A student centered program with emphasis placed upon occupational information, exploration, guidance and counseling to develop planfulness in students both occupationally and educationally.

[1]Using Curriculum Developments, Association for Supervision and Curriculum Development, National Education Association, Washington, D. C. 1963.

[2]Vocational and Technical Education in Illinois, Bureau of Educational Research, College of Education, University of Illinois, 1960.



Soil Science is taught to all students enrolled in the Agricultural Business curriculum. Here, a student of the Lenoir Industrial Education Center learns the technique of making a soil pH reading.

3. More time devoted to the application of science to agriculture.
4. Broader supervised programs to include placement for experience in nonfarming agricultural occupations.

In existing progressive programs of vocational agriculture only slight changes appear necessary in order to meet the needs associated with preparation for technical training in agriculture.

Post-High School Technical Training in Agriculture

The major responsibility for technical training in agriculture belongs to post-high school programs and institutions.

The Young and Adult Farmer Programs in North Carolina are becoming a more specialized and technical continuation of the high school program. The instructional approach is to have farmers organize by interests and problems and to conduct intensive, thorough, specialized courses.

Agricultural trade and technician training programs are emerging across the nation in a variety of institutions —Community Colleges, Junior Colleges, Technical Institutes, Industrial Education Centers and University and College Extension Programs.

Technical training programs in agriculture are being offered in eleven of the twenty area schools in North Carolina. In addition to agriculture and other technical subjects, these area schools offer trade and college parallel training. Curricula in Agricultural Business Technology, Agricultural Chemicals Technology, Agricultural Equipment Technology, Farm Business Management, and Poultry and Livestock Technology have been developed and each of the eleven area schools offers technical training programs in one or more of the curriculum areas.

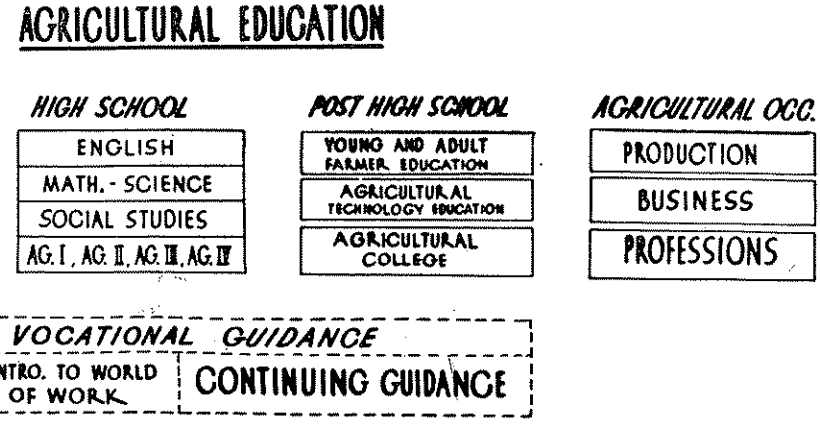
Initial efforts to extend educational opportunities in technical agriculture have resulted in many problems. Some of these are:

1. Creating and projecting the desired image for this new dimension in agriculture education.
2. Conducting research upon which to base decisions for program development.
3. Providing the facilities required.
4. Teaching relatively small classes, resulting in high per-pupil cost.
5. Securing instructional personnel where no pre-service programs exist, forcing dependence upon in-service education to re-orient available personnel.
6. Developing curricula and teaching materials. This demands identification of technical job opportunities and job competencies.

These and other problems involved in providing technician training in agriculture are facets of the core or critical issue of properly relating the *students, the instructional program and the technical agricultural job.* Progressive functioning of post-high technical education depends upon the success attained in coordinating these three essential components. Each must be related to the other in the proper prospective and the three must be closely correlated.

If such relationships are necessary, then what are the problems inherent in properly relating the three identified aspects of technical education in agriculture? A partial listing might include:

A. Relating the *student* to the instructional program and to the agricultural job.
   1. Getting prospective students to visualize technical agricultural jobs.
   2. Assisting students in developing understandings of post-high school technician level education. Image creation and projection.
   3. Developing appreciation for and understanding of the skills, abilities, knowledges, and understandings required in technical agricultural occupations through various techniques (part-time employment during the school year, summer employment, visits to industries, visiting speakers, etc.)



B. Relating the *instructional program* to the student and to the agricultural job.
   1. Developing and maintaining sound educational approaches, occupationally oriented with the assistance of advisory committees from industry.
   2. Developing appropriate curricula. How much basic training? How much specialization? Relating the two.
   3. Maintaining industry and student contact.
   4. Enrolling students who can benefit from technical training.
   5. Placing graduates and providing continuing education on the job.

C. Relating the *agricultural job* to the instructional program and to the student.
   1. Identifying technical jobs that require agricultural knowledge and ability and the skills needed to perform these jobs.
   2. Determining realistic job opportunities, including the effect that an available supply of trained technicians would have on the number of openings.
   3. Ascertaining employer's willingness to contribute to the school and students—scholarships, part-time employment, service on advisory committees, industry as field laboratories, equipment and supplies.
   4. Getting industry and business to recognize that technician training programs and institutions are a good source of employees with adequate training for technical jobs.
   5. Providing effective updating training of present employees as one means of gaining support and participation of industry.
   6. Involving industry and business leaders in student and school activities.

Even though some modest effort has been made in North Carolina toward solving the perplexing problems pointed up in this article it is felt that agricultural occupations at the technical level have not been really identified, appropriate educational programs have not been adequately formulated, and students are not cognizant of the opportunities available in technical education and employment.

When the *student,* the technical *school,* and the *agricultural job* are properly related, effective technical education in agriculture will emerge. □

Junior Colleges Pioneer in Training Agricultural Technicians

S. S. SUTHERLAND, Department of Agricultural Education
The University of California, Davis, California

Editors Note: This article is based on a presentation made by Dr. S. S. Sutherland to the National Center Seminar "A Design for the Future." A full report of this address is included in the workshop summary.

Much of the pioneering effort in providing training for technicians in agriculture has been done in the Junior Colleges. A review of their experiences and the trends in their program should give direction to those planning to devlop and organize such programs. The following seem to be some of the trends which can be identified, some of the opportunities and challenges which the future may hold for agricultural education at the post high school level:

1. All Junior Colleges will continue to offer programs leading to College transfer and placement in farming but considerably more attention will be given to preparation for those occupations in agriculture which serve farmers and farming. This trend is already well defined.

Five years of experience with agricultural business curricula were summarized recently. It was found that four of the original pilot programs had continued to function. Some as originally established; others with considerable adjustments; briefly teachers reported that the original concept of a program jointly administered by departments of business and agriculture would not work in all cases and that the administration has shifted to agriculture with students electing courses in business which are appropriate.

Conceived originally as occupational training for immediate employment, experience has shown many students elect this curriculum for transfer to four year colleges. However, the production courses, which are needed as preparation for business occupations as well as for farming are being taught with somewhat different emphasis with the realization that the students enrolled may have either of these two employment objectives. While the term "agri-business" is useful in emphasizing a distinction between production curricula and those with marketing and service objectives it may not properly describe all nonproduction curricula. However, the term has been widely accepted and it does describe a major segment of modern agriculture. Perhaps more descriptive terms might be "agricultural services" and "agricultural technology."

2. One major recommendation of the panel of consultants relative to vocational and technical education beyond the high school states: "Technical education should be emphasized, improved and expanded by increasing Federal support for programs designed to prepare individuals for useful employment in technical occupations requiring scientific or technical knowledge and skills." While the term "technician" is generally associated with the factory, industry, or engineering, there is already considerable evidence that we have many technicians in agriculture, and steps are already being taken to introduce courses for the training of these persons in junior colleges.

In North Carolina, seven Industrial Education Centers have been established, in which courses in agricultural technology have been introduced. The programs thus far available include two-year courses in agricultural equipment technology, agricultural business and poultry services technology, and a one-year course in farm machinery. They anticipate an enrollment of 100-

150 students this fall in the four centers where this instruction will be available.

Jerry Halterman reports in another article in this issue on a number of developments in technical education which have taken place at Modesto Junior College in California.

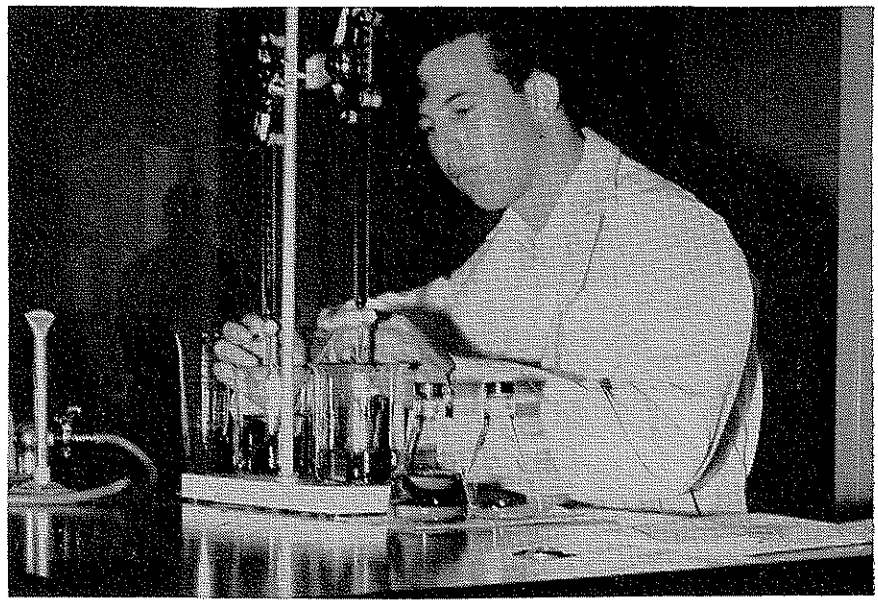
At the Mt. San Antonio College in southern California, the Halterman study and a local study of agri-business occupations made by the head of that department, G. A. Sherman indicated that there might be a complex of technician-type occupations in the various federal, state, and county agricultural agencies. Therefore he started a study supported by NDEA funds of these occupations in the area served by that school. This study has just been completed and copies of the summary are now available. Sherman found fifty job classifications employing over 400 persons whom he identified as "public service technicians." On the basis of his findings, he has planned three curricula—more general in nature than the Modesto curricula—one each for plant science technicians, animal science technicians, and agricultural engineering technicians.

The plant science program is designed primarily for students preparing for agricultural inspection, forestry, and turf grass management; the animal science for livestock, meat and brand inspection, and animal laboratory technician; the agricultural engineering for employment in food processing.

Both Modesto and Mt. San Antonio Colleges have received requests from the Forest Service to establish courses for the training of technician level persons for forestry jobs. So technician training is on its way.

3. While the community service function of these colleges in agriculture has received relatively little attention, whenever instruction has been offered the response has been remarkable. A course in plant diseases offered at Bakersfield College attracted over 100 farmers, pesticide specialists, salesmen and others; a course last fall for nurserymen and soils specialists at another junior college had to limit enrollment to keep class size down to a number commensurate with facilities available.

When it is considered that so called extended day or evening class enrollments overall far exceed the regular day enrollments, there may very well be a great, relatively unexploited service to be rendered by these schools, in up-grading persons already employed in agriculture.



A far cry from yesterday's farming, today's agricultural work is steeped in the use of scientific instruments. Agriculture Technology 52, a course in the use of scientific instruments, is part of the answer to our changing agriculture.

Minnesota as you know has exploited and developed its opportunities for this type of adult education for farmers.

It we take our cue, therefore, from the report of the Panel of Consultants and redirect and improve vocational and technical education in agriculture beyond the high school; if we provide appropriate curriculums for full-time students who finish high school and can spend an additional 2 years to improve their occupational proficiency, either as farmers or in agricultural services. . . .

If we can discover those occupations in agriculture in which technicians are needed and establish or expand programs designed to provide the scientific and technical knowledge and skill required in these positions. . . .

If we can forget or reinterpret the limitation of "less than college grade" . . . and it appears that we can.

If we obtain and train teachers who can and will maintain quality standards in their instruction; keep up to date; maintain their lines of communication with agricultural industry. . . .

If we can place and follow up those whom we train in these programs. . . .

Then there appears to be a whole new future for this type of post-high school education in agriculture.

There appear to be many "ifs"; there probably will be set-backs and frustrations as we move forward in developing these programs. However, if we remain alert to these opportunities, research for basic information, establish pilot programs to try out promising new departures and to implement research findings we should be able to change many of these "ifs" to certainties. □

More than 200 schools and colleges are already conducting training programs for over 13,000 unemployed men, women, and out-of-school youth under the new Manpower Development and Training Act under the Department of Health, Education and Welfare. Phi Delta Kappa

Themes For Future Issues

March **Teaching Farm Mechanics**
April **Guidance for Agricultural Occupations**
May **Improved Classrooms and Shops**
June **Evaluating Local Programs**

The Agricultural College and Technical Education

FRED SNYDER, Director of Short Courses, The Pennslyvania State University

Many types of technical training programs are offered in the United States.

The College of Agriculture at The Pennsylvania State University provides a large variety of educational programs. In Resident Education, curriculums provide thorough preparation in the agricultural and biological sciences; instruction in the applications of these sciences to the agricultural and biological industries; and a liberal as well as practical education. A student who successfully completes the curriculum receives a bachelors, masters, or doctoral degree. These individuals eventually become the top level administrative and supervisory personnel.

Equally as important to the University, the individuals concerned, and employers, are the nondegree programs offered by the College of Agriculture. Among these are a series of Short Courses which were established in 1892 and Winter Courses, established in 1956. It is through the Short Courses and the Winter Courses that attempts are being made to develop the technically trained people needed by related agricultural occupations.

Short Courses

Certain occupations whose training requirements may be met by Short Course training are as follows:

Dairy Herd Improvement Testers—The training covers a period of two weeks and includes the testing of milk for butterfat and the keeping of records. Except for the acquainting of the individual with the D.H.I.A. procedures and the IBM techniques, this training could be done in a high school or junior college.

Dairy Laboratory Directors—individuals who complete this program are employed by dairy companies and their dairy laboratories. The subject matter includes the various methods of counting bacteria, the reductase tests, tests for various bacteria and antibiotics, water analysis and so forth. This is a two-week program that might be offered by a junior college, but is beyond the level of a high school.

Artificial Breeding Technicians Training—this ten-day course is designed specifically to train inseminating technicians. It deals with all phases of procedures, techniques, evaluation, and public relations. It is beyond the high school level, but possibly could be taught in a junior college.

Testing Milk and Cream—this five-day course provides the technical information and skills required by those who desire a license in weighing, sampling, and testing dairy products. It is doubtful whether a high school could furnish the required instruction, but a well-equipped junior college could do so.

Winter Courses

The Winter Courses of the College of Agriculture in Penn State prepare individuals for positions on the middle management level. In addition to the technical knowledge and information about the basic procedures, practices, and skills, related knowledges are also presented. This would include such items as personnel management, written English for specific occasions, public speaking, salesmanship, record keeping, and legal aspects of the position. The Winter Courses consist of two eight-week terms a year in each of two years, with a six month's placement for on-the-job training in the summer period between the second and third term. The technical advisors for each option of the Winter Courses assists in placement for on-the-job training as well as for permanent positions. The co-operation of industry is a must. At present, there are three Winter Course options offered at Penn State. They are:

Farm Equipment Service and Sales—to prepare men for such positions as salesmen, partsmen, foremen, and managers of dealerships.

Ornamental Nursery Management—to train individuals in the propagation, field production, and use and maintenance of trees, shrubs, and flowers.

Turfgrass Management—provides training in the fundamentals of turfgrass technology necessary for the supervision and management of golf courses, municipal and industrial parks and lawns, athletic fields and playgrounds, cemeteries, highway roadsides, estates and airfields.

Certain high schools may be able to provide a basic program in the Winter Courses, but few could provide the high-level training needed by individuals for the middle management level. Junior colleges also may experience difficulty since the technical advisor must be an authority in his field and a high degree of co-ordination and co-operation by the industry and the technical advisor is a necessity. Unless these requirements are met there will be difficulties in placing individuals for on-the-job training and in permanent positions.

Associate Degrees

An Associate Degree program is also in operation at Penn State. This consists of two years of instruction (six ten-week terms) during the regular college year. At present, the Associate Degree in Forestry is the only one increasing in size. Graduates of this program will be on the middle management level. The program concentrates less upon the technical aspects and provides a broader training than the Winter Courses, including subjects in Arts and Humanities and the like. The programs are beyond the high school level, but junior colleges conceivably could provide the necessary training.

Three hundred forty-five students were included in a study of those preparing for middle management positions. Of these, 134 were enrolled in the Farm Equipment Service and Sales with 97 successfully completing the program, 33 voluntarily withdrawing and four dropped because of poor scholarship. The Ornamental Nursery Winter Course had a total of 85 enrollees with 60 of them graduating, 16 voluntarily withdrawing and nine dropped because of poor scholarship. One hundred twenty-six individuals were enrolled in the Turfgrass Management Winter Course and 99 successfully completed the course, 22

voluntarily withdrew and five were dropped because of poor scholarship.

The high school rank was available for 216 of the 345 students included in the study. The data revealed that there was no significant difference in grades achieved by those students for whom a high school rank was available and those for whom the rank was not available.

There was a significant difference in the grades achieved by students enrolled in the various options. This difference was attributed to the higher grades received by those enrolled in Turfgrass Management and the number of individuals in the Ornamental Nursery option with low grades.

Of special interest was the fact that 93 students were in their fourth-fifth and fifth-fifth level of their high school class. Of these, 60 successfully completed the course, 25 voluntarily withdrew, and eight were dropped because of poor scholarship. In examining the data for those who withdrew it was learned that 12 of the individuals (out of 25) had grades which would permit them to graduate.

This data indicates that high school rank is not necessarily an indication of how well a student will do in a technical program. Since many of the students are older, have acquired marital obligations, and have been gainfully employed, it is the opinion of the author that prior experience and the motivation factor played an extremely important part in successes achieved by students in the lower level of their class.

Summary

The success of any program depends upon (a) the philosophy and attitude of the training institution, (b) the needs of the industry, (c) the degree to which the institution provides training for industry needs, (d) the facilities available, (e) the competency and the enthusiasm of the staff, (f) the close co-ordination and co-operation between the industry and the instructional staff involved (especially the technical program advisor), and (g) the use of on-the-job activities as "training programs" rather than "labor programs." Since the training programs of the College of Agriculture, The Pennsylvania State University, are fairly comprehensive, these will be described and readers may utilize them in visualizing other programs.

In general, the lower the level of training, the more practical it becomes. As the level of training increases, the offerings need to become broader and the individual is then better able to assume increased responsibilities upon graduation. Thus, manual skills without responsibility can be provided by on-the-job training and to a certain extent by the high school. As responsibility and decision-making increases, the junior colleges, colleges, and universities become more involved and there is a corresponding decrease in teaching of skills. In many cases on-the-job training provides the skills. The balance of manual skills and broad knowledge must be maintained according to the needs of the occupation.

All types of educational institutions must continuously evaluate their entire program so that they are complete and comprehensive in those areas where either competencies or necessities so dictate. □

Three Curricula for Training Agricultural Technicians at Modesto Junior College

by JERRY J. HALTERMAN, Instructor in Agricultural Engineering at Modesto Junior College

In February, 1961, Modesto Junior College, cooperating with the California State Department of Education, initiated a year-long study in the central California area of workers in agriculture who might qualify as technicians. The study, conducted by the author under provisions of the National Defense Education Act, was concerned with the identification of workers and worker positions in agriculture requiring levels of skill and competence which would be consistent with those levels required of technicians in other fields of vocational endeavor.

Definition of Technicians in Agriculture

It was first necessary to establish a definition for technicians in agriculture since no definitions were available for use. The technician in agriculture can be characterized by: the acquisition of distinctive abilities required for a specific occupation, the achievement of a particular level of competence, and the completion of specialized training required to acquire distinctive abilities and competence. The following is a summary of the criteria used in the identification of technical workers in over three hundred firms and businesses in the central California area.

> "A technician in agriculture shall be considered: An individual who through an extended period of specialized training in the field of agricultural science and those areas of instruction which support it, has acquired the skill and ability to make practical application of theoretical knowledge performing specific tasks in the production of goods and services in agriculture . . . and in the performance of his work he shall:
>
> Exercise mental (cognitive) skills primarily, but manipulative skill is important, in such activities as servicing, repairing, maintaining, reporting, building, controlling, supervising, operating, testing, diagnosing, and investigating.
>
> Exercise good judgment, discrimination, common sense, and initiative.
>
> Make decisions based on predetermined standards; follow general course of action laid out by supervisory personnel.
>
> Do limited organizing and programing, job planning, evaluation and administrating.
>
> Collect, examine and interpret plans, designs, and data.
>
> Determine actions to be taken on the basis of analysis.
>
> Generally act in support of and frequently perform tasks that would otherwise be done by a professional worker.

Kinds of Technicians Needed

Respondents to the survey indicated a need for qualified technicians in one hundred fifty-five different job positions, and nearly 75% of those responding indicated a need for technicians. Classification and grouping of workers based upon the possession of a common core of knowledge, skills, and abilities required for job performance resulted

in the establishment of eleven groups of technicians in agriculture each thought of having workers qualified to perform a basic cluster of skills. These groups include the following: Veterinary Technician, Agricultural Public Services Technician, Agricultural Sales-Service Technician, Agricultural Field Production Technician, Agricultural Research Technician, Agricultural Laboratory Technician, Agricultural Industrial Production Technician, Agricultural Engineering Technician, Agricultural Communications Technician, Agricultural Business Technician, and Landscape and Nursery Technician.

Selected Findings and Observations

Over 85 per cent of all work activity engaged in by technicians in agriculture is in general fields of work other than farming and ranching while just less than 15 per cent is in production agriculture.

Two-thirds (67.0% of all technical positions reported normally require training in General Mathematics for job performance, whereas just over one-fourth (26.3%) require training in Elementary Algebra.

A ready confirmation of needs for qualified workers to perform many technical aspects for work normally done in this field by professional personnel. Professional personnel feel the need to devote more of their time to professional endeavor and to have qualified assistants perform the more common semi-professional duties of their practice.

A recognition of need was found for the issuance of a license or certificate befitting the education qualifications and labor specialization of technical workers to lend status.

Greater specialization of services and the adoption of new methods and utilization of new devices will require that sales personnel be more highly trained and qualified as time goes on.

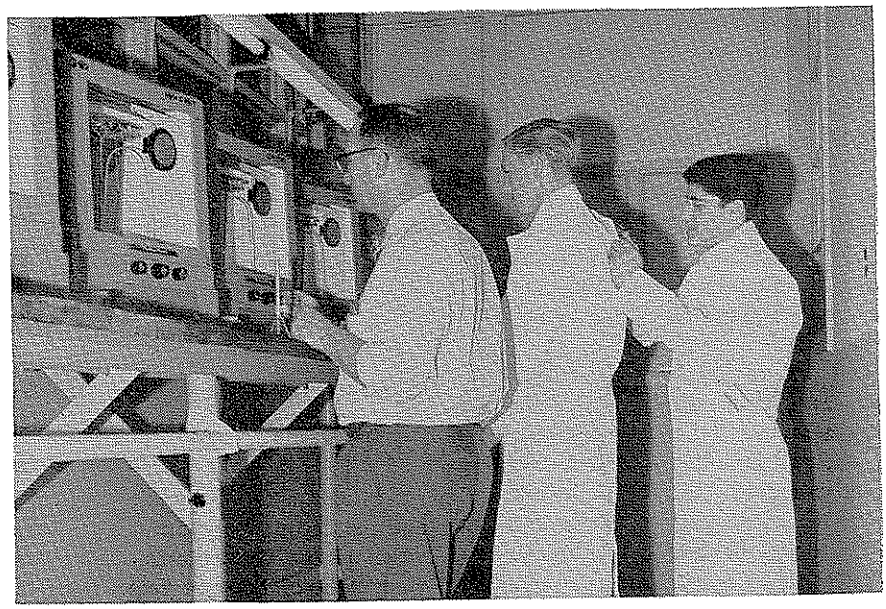
The "field man" is seen as the man of the future in agriculture. Technically trained field men are needed now and greater numbers will be needed.

The stress imposed by the need for research workers has resulted in many professional workers being used in positions where technicians could be employed. There is a definite shortage of technicians in this field.

Public service agencies use laboratory technicians to a great extent and since it is expected that service agencies will increase in size and service, additional technicians in this field will be needed.

Standards have now been established by U.S.D.A. and other governmental agencies for the classification of personnel in technician positions.

The application of new techniques and devices to agricultural business situations such as computers and data processing has introduced a whole new area where business technicians are needed.



Precision weighing by grams and milligrams is part of today's agriculture, and compared to yesterday's rough ton measurements, are an indication of agriculture's change. In research, in quality control and diagnosis, accuracy and precision are today's need. At Modesto Junior College, these are learned in Agriculture Technology 52, the science techniques course.

Training in Agricultural Computations

One of the early indications obtained from the results of the study was the need for a high level of competence in the field of applied agricultural math. Consequently, the first of a series of technician offerings was added to the agricultural curriculum, that of "Agricultural Computations" in the Spring of 1962. In this course, attempt is made to qualify students in all areas of agricultural mensuration and arithmetic calculation. Two sections have been offered each semester.

Laboratory Procedures Training

As study was made of the eleven technicians groups identified in the technicians report, concern was given to the organization of courses, each of which might include instruction in areas needed in the qualification of more than one technician group. A study in laboratory procedures was determined to be such a course. Resource personnel representing industry, administration, and education were consulted with to assist in the determination of course content. Technician and management personnel from industry were particularly valuable in this effort and much consideration was given to their contributions.

The laboratory procedures and techniques course was structured to provide for instruction in the essential techniques and basic science procedures to enable the student to perform as a technician with the specific skills commonly used in agricultural laboratories. Typical of that included in the course content was instruction in the use of the following instruments and apparatus: compound and stereoscopic microscopes, analytical balances, pH meters, density and specific gravity meters, refractomer, distilling apparatus, soxhlet extractors, separators, electrophotomer and bacteriological and microbiological apparatus. Typical laboratory procedures, practices, and assignments include: sperm count in bull semen, mold colony morphology and counts, preparing solutions of specified concentrations, titrations of acids and bases, determination of pH, analysis of fruit juices, extraction of fat from feeds, separation by chromatography, type blood, and separate mixed bacteria.

Training Animal Science Technicians

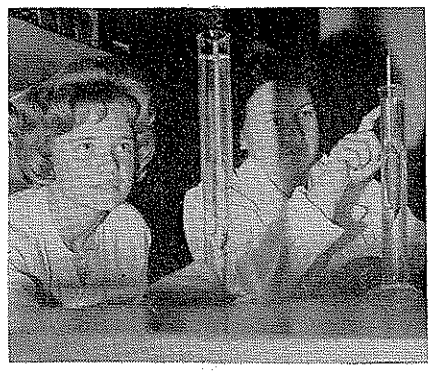
The field of animal science was selected as the first general area in which an offering would be made to qualify a specific technician. A two year curriculum for the preparation of "Artificial Insemination Technicians" was structured by the animal husbandry staff of Modesto Junior College working in cooperation with the artificial insemination firms of the area and the California State Division of Animal Industry.

Many of the courses included in the artificial insemination program were already a part of the curriculum of the Agricultural Department. These

courses were: Principles of Dairying, Beef Production, Breeding and Selection, Diseases and Parasites, Feeds and Feeding, Record Keeping and Analysis, Agricultural Experience, and Dairy or Livestock Management. Students are also expected to take the agricultural computations and laboratory procedures courses. In addition to the foregoing, a new five unit course is required. This course is described as "the advanced study and practical application of breeding principles and artificial insemination of farm animals; the collection, processing, and handling of semen; the job and responsibilities of the technician; and the management and sanitation practices affecting reproductive efficiency." Courses in Bookkeeping, Salesmanship, Psychology, and Business Organization are also required. By satisfying the general education requirements of the College for graduation, this two year curricula qualifies also for the associate in arts degree.

Training For Ornamental Horticulture Technicians

The newest addition to the technician series is the Ornamental Horticultural Technician, inaugurated in September of this year. This specialty is designed to qualify workers in the technical aspects of producing nursery and landscaping materials, of using plants and other landscaping materials in designing, and of planting and supervising the construction activities associated with landscaping. Representatives from retail and wholesale nurseries; landscape contractors; landscape architects; landscape designers; state, county, and city



The laboratory techniques course teaches the use of scientific instruments found in laboratories and in the field, but necessary in today's agriculture.

recreation and hiway departments; and state nurseryman associations were used as consultants in the development of this program: Some of the courses in this study include: Basic Mechanics, Plant Identification and Materials, Nursery Practices, Landscape Planning, Agricultural Economics, Record Keeping and Analysis, Soils, Agricultural Computation, Farm Surveying, Fertilizers, Plant Pest Control, Agronomy, Propagation, and Marketing.

Other Plans

Consideration and study is now being made of the needs of other technician offerings. Determination has been made to introduce training programs to qualify Agricultural Engineering Technicians next September. Other possibilities under consideration include:

1. *Agricultural Public Services Technician*—those workers needed to provide technician services for federal, state, county, municipal, commercial, and private agencies and firms in the activities of control, standardization, inspection, grading, certification, and quarantine of agricultural products and of analysis, regulation, and enforcement of agricultural programs.
2. *Agricultural Sales-Service Technician*—those qualified to provide technician service as sales representatives of private and commercial firms dealing in services and goods used by agricultural producers, processors, distributors, and merchandisers.
3. *Agricultural Field Production Technician*—those possessing technical competence to assist in the production of agricultural commodities at the farm and ranch level.

In Summary

While it is too early to accurately evaluate the degree of success obtained in the technician program at Modesto Junior College, a number of observations can be made as a result of the experience thus far:

1. A sound, broad program of agriculture is an excellent base for and greatly facilitates the introduction of a technician training program.
2. Personnel to give specialized, technical instruction must be available for each of the programs introduced.
3. Adequate supplies, equipment, and facilities consistent with the level of training offered must be available.
4. The need for trained technicians must be clearly shown in the area which the school serves.
5. Some responsibility for the program must be assumed by those individuals, firms, and agencies desiring qualified workers. □

Michigan Workshop Studies Nonfarm Agricultural Business

RAYMOND M. CLARK, Teacher Education, Michigan State University

How are nonfarm agricultural businesses organized and operated? What experiences can we develop in our agricultural and business programs to help our students learn the principles of organization under which the businesses of our community operate? As we train for employment in the agricultural occupations, what contributions should be offered by business teachers, by agricultural teachers and others so that a complete package of instruction can be provided?

These represent the major questions on which a workshop for teachers of business and agriculture was offered at Michigan State University during the 1963 summer session. Financial assistance in the workshop was furnished by the Michigan Association of Farmer Cooperatives in the form of cash paid directly to each enrollee to assist him in paying workshop fees.

Workshoppers had an opportunity to visit the Michigan Farm Bureau organization where they studied the principles of organization of the cooperative; the office practices; the methods of control; management; and organization of subsidiaries and financing practices.

Farm Cooperatives Studied

Organization and operation of a farmer owned corporation for the

Teachers playing roles as members of the Board of Directors of a Farm Cooperative. Make revisions in the bylaws of the organization.

purpose of marketing farm produce was presented by one of the stockholders and organizers of this type of business.

These presentations along with materials provided by the workshop staff, a representative from agricultural economics, from business education and from agricultural education, provided the participants with the basis for working out projects of their own. These projects included plans for operating FFA, business club, and young farmer organizations in a manner that will provide the best possible learning experience regarding the methods of organizing and conducting such an organization.

Teaching Materials Developed

Plans of the teachers for their programs were developed by committees including: (1) a group to develop teacher plans and source units, (2) a group to develop suggested constitution and bylaws for FFA and Business Clubs, (3) a group to develop visuals for use by teachers in teaching principles of business organization. This group worked on materials for teaching the characteristics and principles of the four ways of doing business, (4) a group to study the occupational opportunities and level of training required by the agricultural businesses under consideration.

Experience has indicated a definite lack of instructional materials, particularly in business education programs that deal with the agricultural-business aspects of the economy. No where have we found materials that combine needed agricultural materials and needed business materials in one book.

Recognizing this need some committees worked out source units, lesson plans and course outlines to be used in teaching for the agricultural business organizations. In some cases the teachers of business worked out instructional units for their high school bookkeeping classes that involved record keeping and a better understanding of principles of economics. One participant, who is employed as a business education teacher in a Community College prepared teaching plans for economics and accounting classes in a Community College, dealing with the agricultural businesses of his community (a city of approximately 200,000 population).

Other groups of participants worked out a series of visuals for use in teaching the functions of various types of business. These included Diazo prints on paper and for use as transparencies for the overhead projector; flannel board material; 2 x 2 slides and charts and graphs.

Another group prepared the constitution and bylaws for use by FFA chapters and business clubs to assist them in teaching the organization and operation of business using a constitution-bylaw approach. The group recognized the fact that such materials must be modified for local situations, but they also emphasized that many times we "miss a bet" when our groups work on the production aspects of a project of some sort without also developing the business organization to accompany the activity.

Use of Organizational Games

One of the features of the workshop included the organization of the participants into three types of business which would provide some experience in these organizations. (Some times we call these "games as an instructional aid.) These included a candy cooperative; a hog marketing business, and an investment club for purchase of stocks and bonds. These organizations served to emphasize the characteristics and the advantages of several types of business. The cooperative as an extension of the farm business was demonstrated and the use of the corporation or partnership for some other types of business was included in the experience of the group.

For each of these organizations appropriate committees were selected. The board of directors of each group appointed a manager and the business of the organization was reported to the total membership at intervals throughout the workshop.

Occupational opportunities and training needs for beginning workers in the nonfarm agricultural business represented the special problem of one of the groups of students. These men reviewed much of the current research in the field and then undertook to determine the local occupational opportunities and made plans for some work-experience programs for their local school programs.

Near the close of the workshop questions were raised by participants as to availability of reports of the various committees and groups that had been operating. As a result they established a committee to assemble the reports, edit, and submit them for duplicating. The committee recommended that the report be made available to all teachers of agriculture and business in the state. It will be impossible to transmit to all teachers the enthusiasm of the participants, however, it is hoped that enough will carry through to make the distribution worthwhile.

Teacher's Evaluation

The workshop participants recognized the vast field to be covered as we study all agricultural business and attempt to develop training programs for each of them. The fact that both teachers of agriculture and teachers of business were enrolled in the workshop helped to emphasize the importance of integrating the subject matter characteristics of each group, in the development of content for training programs.

Students were enthusiastic in their praise of the workshop, not only be-

cause of the financial awards furnished by the Michigan Association of Farmer Cooperatives, but also because it provided an opportunity to study the characteristics, opportunities and training needs of one of the most important segments of the business communities in which they work.

A workshop for counselors was also held during August under the auspices of the agricultural education service. Participants were subsidized by the Michigan Association of Farmer Cooperatives. Purpose of the workshop was to acquaint counselors with the occupational opportunities in nonfarm agricultural businesses and industries.

An attempt was made to enroll teachers of business, teachers of agriculture and counselors from the same schools in one of these workshops. Although this was not always successful, it is hoped that a higher level of teamwork will be developed in the schools represented by workers from the three areas. □

National Center Seminar Outlines New Roles

ROBERT E. TAYLOR, Director,
The National Center for Advanced Study and Research in Agricultural Education

It is difficult to record, synthesize, and report all of the discussion and benefits of a national seminar involving over one hundred participants from thirty-four states, much less capture the "spirit of the meeting." However, in the judgment of many, the climate of the seminar evidenced enthusiasm, optimism, and a new vigor in agricultural education.

As the seminar progressed it became increasingly clear that the "Design for the Future" would not be *a* design for a standard agricultural education program which would be replicated in each school throughout a state or by each state throughout the nation, but that the design would encompass *multiple patterns*. Neither would every local program be expected to provide for all the specialized training needs in agriculture. In many areas new organizational and administrative patterns will need to be developed. Diversity, flexibility, and adaptability should be the cornerstones of agricultural education for the future if we are to develop comprehensive programs which will adequately meet the specialized educational needs of the agricultural industry.

Role of Agricultural Education in the Public Schools

One of the fundamental problems confronting the seminar was the development of a role statement. What should be the role of agricultural education in the public schools? The following statement was developed.

> The purposes of agricultural education in the public schools are twofold: To contribute to the broad educational objectives of the public schools; to provide education for employment in agriculture.
>
> Agriculture is and will continue to be an essential part of our country's economic and social structure. Education in agriculture should be available to all those who are or may be engaged in this important field of endeavor and to many who may participate as citizens in the formulation of public policy for agriculture.
>
> To accomplish these purposes, programs of agricultural education should be improved, expanded, and extended to meet the educational needs of youth and adults. These programs should include vocational education for:
>
> 1. *High school students*
>   a. Youth in high school who are preparing to enter agriculture, including both farming and ranching and other agricultural occupations (occupations in which competency in agriculture is essential or highly advantageous)
>   b. Youth who need agricultural education preparatory to continuing their study in technical schools, colleges, and universities
>   c. Youth who need assistance in making a valid vocational choice concerning an agricultural occupation
> 2. *Post-high school youth*
>   Those continuing and returning for extended formal pre-employment education
>   a. Those preparing for or becoming established in farming or ranching
>   b. Those preparing for other agricultural occupations, such as technicians and agricultural service personnel
> 3. *Working youth and adults*
>   a. Those who need or desire training and retraining for farming or ranching
>   b. Those who need training or retraining in other agricultural occupations
> 4. *Youth and adults with special needs who may engage in agricultural occupations*
>   These should include, but not necessarily be limited to:
>   a. The handicapped youth and under-achievers
>   b. Those unemployed and underemployed
>   c. Those who are otherwise disadvantaged
>
> In addition to vocational instruction pointed either directly or indirectly toward preparation for employment, agricultural courses should be provided for youth and adults. These may include, but should not be limited to:
>
> 1. Elementary and junior high courses and/or units which are primarily exploratory and appreciational in nature
> 2. Courses in the high school primarily for their enrichment and avocational values
> 3. Avocational courses for adults, such as gardening, animal science, home beautification, home mechanics
> 4. Courses for business and professional persons and others who wish to develop a better understanding of agriculture.
>
> The need for providing a broad range of educational opportunity in agriculture to all who are interested and will benefit from it is clear. The population of this country is mobile and many agricultural occupations are transitory. Diversity, adaptability, and flexibility must characterize the programs of agricultural education in the future. The pattern that may be applicable or desirable in one locality or state may not be suitable in another.
>
> Furthermore, as we inventory opportunities for providing agricultural education for youth and adults we should not attempt to do the job alone nor should we conclude that all these needs must be met at one level of education. The emerging community colleges, vocational-technical area schools, and the addition of the thirteenth and fourteenth years to some comprehensive high schools provide opportunities for even more diversified and more specialized programs of agricultural education than we presently have or envision. The necessity for continuing appraisal and redirection is recognized if we are to provide effective agricultural education for this nation's youth and adults.

It is recognized that this statement is not final and that individual states may wish to modify this to best fit their particular situations. Furthermore, this statement *should not be interpreted as a de-emphasis* of training present and prospective farmers, but rather an attempt to improve this phase of our program and expand and extend it to meet the diverse needs for agricultural education in the public schools.

Think Big

Members of the consulting staff continually challenged state staff members to "think big." Agriculture was referred to as a growth industry and there were indications that there is a broad spectrum of unmet educational needs in this field. The favorable national legislative climate further encouraged participants to expand their vision in designing agricultural education programs of the future. States were encouraged to take advantage of flexibilities existing in the present program. In some instances states are using over-matched funds to develop educational programs in agriculture that are beyond the scope of present policy. Individual states are doing much with their own resources. Several states have met with success in securing additional state funds for needed educational programs in agriculture.

Growing Edges in Agricultural Education

Participants were impressed with the large number of "growing edges" in agricultural education. Many states have made progress in developing specialized courses to provide vocational education in depth. Some of these growing edges are forestry, conservation, horticulture, rural recreation, management and finance, preprofessional and pretechnical, agricultural services, and agricultural technician training, and areas within these. In a number of instances agricultural education personnel have given leadership to nonvocational instruction in agriculture.

An Agenda for Action

Recognizing that keeping up with change is the key to survival and creating change is the key to leadership, consultants and seminar task forces continually emphasized the leadership role of state staffs as they moved toward an agenda for action.

Some of the major areas identified as needing state staff action in the months and years ahead are as follows:

1. Evaluate present programs; identify need for and develop additional programs.

Continuous, objective evaluation must be a part of agricultural education programs. Facts are needed to assist state staffs and local leaders in adequately designing programs which will meet the needs of individuals representing a wide range of abilities, ages, and vocational interests in the broad field of agriculture. Carefully devised pilot programs should be developed, tried out, and evaluated as a means of further refining these programs. It also appears that even closer lines of communication and cooperation will be needed among the vocational services to adequately provide training in those occupations that cut across traditional service lines.

2. Improve state staff leadership patterns.

Attention should be given to the organization of the total state staff through coordinated and cooperative action of both supervisors and teacher trainers to provide effective leadership in agricultural education within the state. Improved communication, coordination, and joint staff committees are needed. Financing for vocational agriculture should also be studied. State staffs may wish to seek additional state funds for agricultural education or take advantage of flexibilities presently available within the present policy structure. Looking ahead to expanded and extended agricultural education programs, states need to "tool up" their leadership patterns. All members of the agricultural education profession have a responsibility for acquainting capable young men with career opportunities in teaching agriculture. Provisions should be made for identifying and training potential state staff members; an adequate in-service program for present staff members should also be developed.

3. Provide more effective assistance to teachers.

As we move toward a more dynamic and comprehensive agricultural education program teachers will increasingly need assistance in a wide range of areas. First, through the development of effective policy and working relationships, state staffs can contribute to a favorable administrative climate for the operation of successful programs of agricultural education. Secondly, teachers will need additional instructional materials and technical assistance if they are to provide vocational education in depth. Also needed are revitalized and broadened pre- and in-service education programs that will provide present and prospective teachers with the specialized competencies demanded by programs of the future.

4. Develop a state research program.

The joint staff, teachers of vocational agriculture, and others need to be involved in the development of a coordinated state-wide program of research in agricultural education. A comprehensive on-going research program is vitally needed if we are to meet the challenges of the current situation.

5. Improve relationships.

State staffs should provide leadership in developing improved relationships and understandings with many publics. Some of these basic groups are local boards, administrators, and guidance counselors; other personnel in the division of vocational education and the state department of education; and representatives of other agricultural and educational organizations and agencies.

We do not have to wait for new appropriations! Much can be done now!

The foregoing agenda for action does not include all of the suggested activities developed during the two-week seminar. Many will want to read the complete seminar report* which includes the presentations of the consulting staff and the task force reports.

Admittedly, the seminar did not provide a panacea nor did anyone expect it. Probably more questions were raised than were answered, but this should be interpreted as a healthy sign. Based on the comments of participants, it provided a means of moving the program of agricultural education ahead, focused on current problems, and sharpened our concept of the "design for the future." □

*Copies of the report may be purchased from the National Center for Advanced Study and Research in Agricultural Education, The Ohio State University, 2120 Fyffe Road, Columbus, Ohio 43210.

Vo-Ag Specialists Spark Texas Adult Programs

BOB CRAIG, Teacher Education, Agricultural and Mechanical College of Texas

Editor's Note

This article is one of Bob Craig's last professional contributions. Word of his death reached us shortly after this article was accepted. We regret his untimely passing.

A new approach to adult education is off to a flying start in Texas. For three years an adult education program, sponsored by The Texas Education Agency and coordinated by the Agricultural Education Department at A & M College, has been proving that adults like school.

It has long been advocated that teachers of vocational agriculture include an adult program as a part of their overall community program, and a good adult program requires the latest information in the various fields of agriculture. In recent years it has become increasingly hard for the teacher on the job to be abreast of all the fields of agriculture, much less be an authority in each. A possible solution to the problem might be to provide specialists in various subject matter fields to assist the teachers of vocational agriculture with their adult programs.

In 1958, Mr. M. A. Browning, Assistant Commissioner for Vocational Education and Mr. George Hurt, Director, Vocational Agricultural Education of the Texas Education Agency decided to initiate such a plan on a trial basis. An agreement was drawn up to headquarter, schedule, and coordinate the program through the Agricultural and Mechanical College. Specialists were to be housed in their respective departments, preferably with Extension and Research personnel, so that all late research and practices would be readily available.

The Department of Agricultural Education was set up to coordinate and schedule the specialists. This was done through direct contact with the ten area supervisors who assumed the responsibility of alloting and making assignments in their areas. Each specialist was assigned to one of the ten supervisory areas for a period of one month each year. He was to conduct three one-week shortcourses during this assigned month.

It was to be the duty of the assigned local teacher of vocational agriculture to organize the course in his community. He was to be furnished course outlines, publicity material and other information to assist him with his job. The teacher also collected the fees required for administration of the program and arranged for any equipment needed for the shortcourses.

The trial program with three specialists met with immediate success and the program has grown to include ten specialists. The specialists are in the fields of beef cattle, swine, dairy, insect control, farm electrification, arc welding, farm management and tractor maintenance. Each specialist conducts three shortcourses each month of from 12 to 20 hours of instruction wth an overall average of 16 hours per shortcourse.

It was quickly found that the size of the class was extremely important. With large classes of over 24 students, it was impossible to obtain individual participation on the part of the students. The ideal class was found to be 16 to 20 students. Very definite enrollment limits were necessary on shortcourses involving equipment, such as electrification, welding, and tractor maintenance.

In addition to scheduled classes, usually held at night, the specialist is available during each day to visit enrollees' farms or ranches on individual problems. Occasionally such problems are important community problems, so that field trips are organized as a part of the course. It has been possible to find many solutions to local problems on these trips.

The acceptance and popularity of this program on the part of teachers, might be indicated by the increasing number of requests for specialists submitted by teachers who say "Give me any specialist anytime one is available." As a result the waiting list is long and no decrease in demand is foreseen.

The chart below indicates the growth of this program from June, 1958, to May, 1961. Effective in July, 1961, the number of specialists was increased to ten and enrollment figures have jumped enormously since that time.

A knowledge of farm electrification can make for more profitable farming. Tarkington farmers, under the direction of Bob Jaska, learn skills in wiring. (H. W. Bostic—Vo-Ag teacher)

June 58 thru May 59—		
1 to 5 Specialists—1st Year		
Courses held	117	
Paid Enrollees		1555
Visitors		426
Total people participating		1981
June 59 thru May 60—		
5 to 8 Specialists—2nd Year		
Courses held	191	
Paid Enrollees		2470
Visitors		1192
Total people participating		3662
June 60 thru May 61—		
7 to 9 Specialists—3rd Year		
Courses held	232	
Paid Enrollees		3211
Visitors		1303
Total people participating		4514

Perhaps the most important factors that have contributed to the success of this program have been:

First: All specialists have worked hard to keep their material pertinent, useable, and challenging. (An evaluation sheet is issued to each class member and the local teacher of vocational agriculture after each shortcourse.)

Second: Classes have been planned to utilize and encourage individual participation. (Many of the shortcourses utilize laboratory teaching equipment carried by the Specialists to allow individual participation.)

Third: Teachers have made every effort to organize and have the class ready. (These first shortcourses have furnished the incentive for the formal organization of a surprising number of Young Farmer Chapters.)

Fourth: The shortcourses include enough time to allow the specialist to concentrate and adequately cover pertinent material. The specialist is not forced to use a scatter barrel load.

All in all it is felt that this program has done much to disprove the oft heard statement that "Farmers and ranchers just won't organize or attend formal classroom instruction." □

Anderson Community Supports Their Young Farmer Program

WESLEY NORTON, Teacher of Vocational Agriculture, Anderson, California

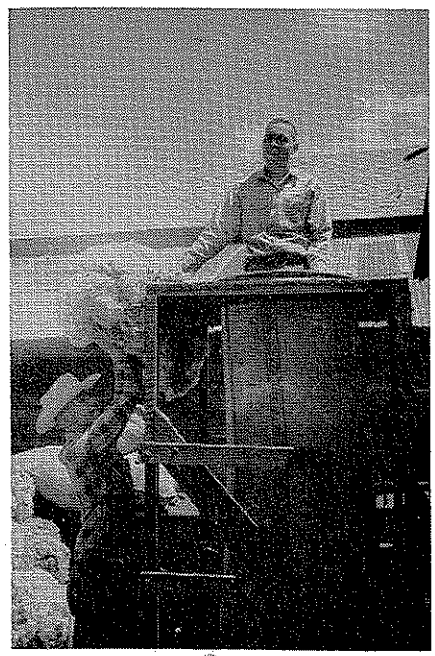
In California, the Young Farmer program is built upon the premise that a well conducted YF program will provide the young man who is a member with additional education, with participation in cooperative activities, with the development of leadership abilities, with work on community service projects, and with some fun and fellowship.

The Anderson, Shasta County, California Chapter has set out to fulfill these objectives in the following manner:

Educational Activities Include A Green Thumb Workshop

Regular monthly educational sessions are held. The topics to be discussed and the method to be used is decided by the chapter officers. At the beginning of each calendar year when the new officers are elected they get together and plan their program of work for the year. The chapter advisor meets with the officers and offers suggestions and ideas that he thinks will benefit the membership. So far this year the educational meetings of the Anderson Chapter have covered such topics as Insurance Needs of the Young Family, Establishing a Credit Rating, Fire Prevention, New Dairy Farm Management Practices, Social Security and the Farm Family, and Tractor Safety.

In most every case these topics have been presented by outside speakers who are more than willing to come in and take over a class session of this group. This alleviates the pressure on the advisor of preparing a lesson for every Young Farmer session. Another factor is with the officers outlining the course of study they come up with ideas that may be overlooked by the advisor.



Young Farmers stomping and bagging wool for wool pool patrons.

The educational aspect is not limited to the members; the community is considered as well. Each year the chapter sponsors a Green Thumb Workshop which consists of 3 to 6 night sessions of two hours each. The YF's arrange the schedule, get the speakers and programs, publicize this activity, and serve refreshments at the end of each meeting. This workshop has proven very popular with nurserymen, home gardners, and new home owners.

Other areas where the chapter has sponsored classes have included arc welding and farm management.

A Wool Pool Is a Major Cooperative Activity

Our members have just completed their seventh annual Wool Pool. Realizing the problem several years ago that the small farm flock owner and the 4H and FFA sheepmen were at a distinct disadvantage, when it came to selling their wool, the Young Farmers decided to do something about it. They built sacking stands in the farm shop, contacted wool buyers, secured publicity, and organized their wool pool. Members stomp, bag, and market the wool. A 2¢ per lb. charge is levied for this service and deducted when the Young Farmers sell the wool. Each patron in the pool receives payment within three weeks of the time that his wool is delivered to the farm shop where the sackers are set up and the Young Farmer crew does the work. The wool pool has proven to be a real community service.

Another example of cooperation was

their "Heifer for Akio" project. Akio Miyazaki, a farm trainee from Japan lived and worked on Chapter member Bill Chastain's farm for a year. Akio had selected a Holstein heifer calf from Chastain's herd and had planned to take it to Japan when he returned. Akio was stricken with appendicitis, complications set in, and he passed away while still here. The young farmers took over the calf, called upon the community for financial help to meet the shipping charges, and sent the heifer to Akio's family in Japan. At last reports the heifer calf had grown into a cow and is now in her third lactation. Akio's family has been most grateful for this gesture from across the Pacific.

Other cooperative activities of the chapter have included securing two boars from the Corn Belt, constructing and exhibiting a fair booth at our county and district fairs each year, participation in community day parades, and similar activities.

Leadership Activities Emphasize Safety

The Anderson Chapter has had one state officer and several regional officers who have developed their leadership abilities within the chapter. Members, through their program of work, develop leadership by participating in so many activities within the chapter and in the community assisting with Car Safety Checks, Hazard Hunts, and assisting in the fair parade. The Anderson Chapter has very few older members. Their average age is only 20 years. Of the members within the chapter many have become leaders and officers in the Grange, Farm Bureau, and other adult organizations.

Community Service Recognizes Pioneers

One of the unusual community service activities of the Anderson Chapter has been its work with the Parkville Cemetery. This old pioneer cemetery was almost completely forgotten. Rich in history, one tombstone reads—"Killed by Indians."

All of the old timers who had relatives buried there had moved away. The Chapter members built new restrooms, cut down trees, burned brush, and sprayed weeds. The members publicized this activity and over the past few years more and more individuals from outside the chapter have helped and the cemetery is no longer neglected but a place of beauty for those who are resting there.

The Anderson Chapter membership was also responsible for the passage of a county dog ordinance. The Chapter sponsored several public meetings on this topic, circulated petitions, and worked with the county district attorney until a satisfactory ordinance was developed.

As Anderson is in a predominately dairy and beef area, the chapter has always taken an active part in promotional activities in these two enterprises. Every year the Chapter takes an active part in sponsoring the area Dairy Princess Contest along with the Young Homemakers and the Dairy Association.

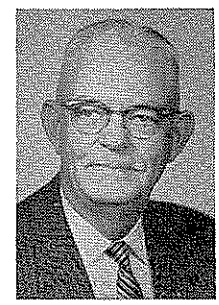
The Young Farmers have been particularly helpful in the support given to the 4H and FFA members. The Young Farmers award scholarships, donate trophies and judge the 4H and FFA Herdsmanship contest at the District Fair, put on and judge FFA Project Tours and Home Garden Contests for the local FFA chapters. They also purchase animals at the Junior Livestock sale.

Fun and Fellowship

The fun in this age group is often spontaneous. Going swimming after a summer meeting, bowling after a class session, a pot luck or a picnic with the Young Homemakers are examples. Each year the chapter has its annual lamb barbecue. Other social activities are the annual fishing trip, the trips to the State and Regional conventions, parties for newly married members, and house warmings when someone moves into a new home.

The Anderson Chapter membership feels it is an integral part of the community and the community has supported this contention with the support that they have given the members down through the years.□

Using Full-Time Teachers for Young and Adult Farmers



By MELVIN W. COOPER, Assistant Supervisor Vocational Agriculture, Madison, Wisconsin

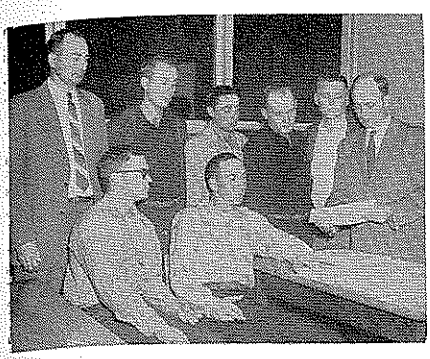
In addition to the young and adult farmer classes conducted by the regular high school instructors in agriculture, we now have in Wisconsin, 19 instructors in agriculture who are devoting part or full time to young and adult farmer classes. Some of these instructors have now been working on this special adult program for about four years. For a normal load, each such instructor giving full time to this program will serve from 60-65 young and adult farmers in four groups. He will each year conduct from 10-20 organized class meetings for each group and will visit the farm of each enrollee once each month for a total of 18 hours per year for the purpose of providing individual on-the-farm instruction. None of the special instructors has reported a problem in maintaining a satisfactory enrollment and a number have found it necessary to keep a waiting list to avoid enrolling more than can be properly served.

Probably the one factor that has contributed most to the success of these special programs has been the practical training that has been provided the enrollees both in the organized classes and upon the farm. It would be impossible to describe all of the activities that have been carried out in these groups, however the descriptions of a few may serve to indicate the possibilities of providing young and adult farmers with the type of training that is of practical value to them in the solution of their farm problems.

Clinton Farm Machinery Course

Like many other schools, Clintonville[1] conducted a farm shop course for veterans, but upon the termination of the veterans' training program, this school decided to continue the course for the benefit of the young farmers of the community. The class instruction is a two week's course held

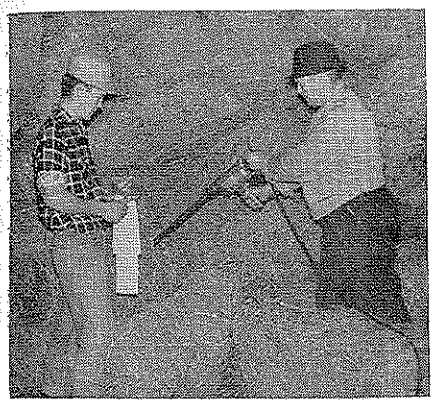
[1]Reported by Robert Schlomann, Adult Instructor, Clintonville, Wis.



A veterinarian serves as a resource person at Clintonville.

in the school shop during the Christmas vacation. The emphasis has been on tractors and farm machinery. Local implement dealers have cooperated by providing mechanics as consultants, dynamometers, tractors and repair parts.

The special instructor in this school has made very good use of other resource persons for his young and adult farmer classes of which the help given by the veterinarian of the of the nearby breeding association is typical.



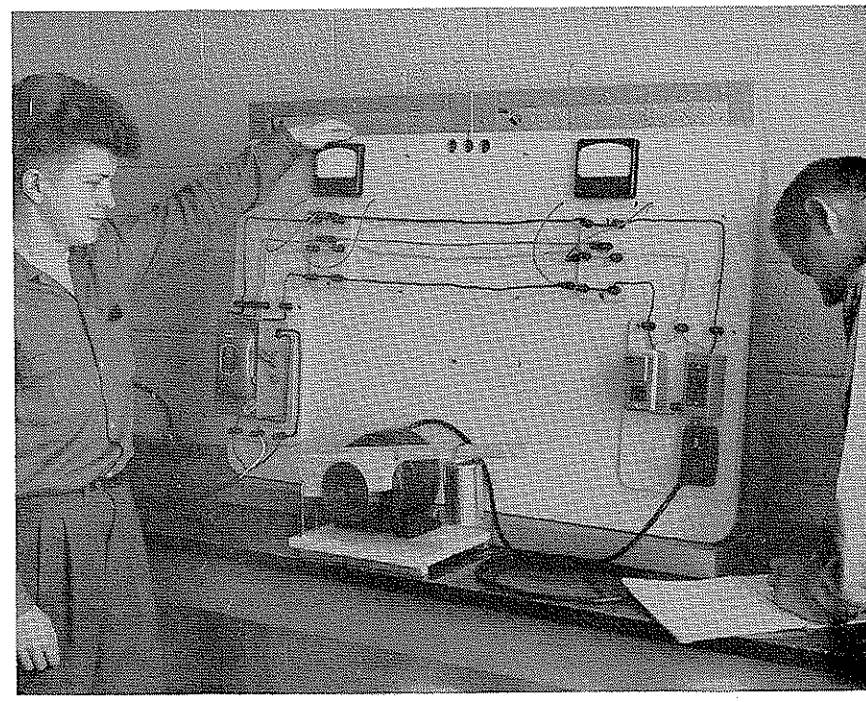
Sampling hay with a Penn State forage sampler at Richland Center.

Forage Analysis at Richland Center

Benefits from young and adult farmer instruction have been good for Ed and Gail Dosch of Richland Center[2] who are farming 350 acres and who are building a high producing Guernsey herd. According to these men, forage analysis has helped raise their herd average in two seasons from 266 lbs. to 417 lbs. of butter fat. This gain amounts to about $135.00 per cow. The forage analysis work is done in cooperation with the special instructor who uses the Penn State forage sampler for taking the samples when he visits the farm.

Electrification Tough at Wausau

The Wausau Vocational School has two instructors who give the major portions of their time to young and adult farmer instruction.



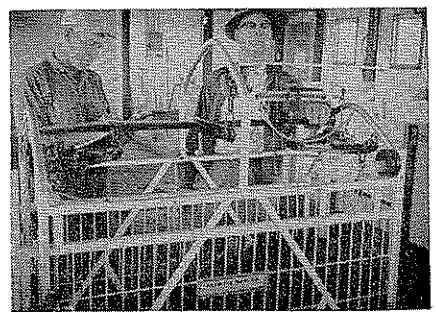
Electrical Demonstration Board used at Wausau Vocational School to show farmers proper and improper wiring.

One of the very practical activities conducted by one of these instructors[3] has been the making of a detailed electrical survey upon the farm of each enrollee as part of the individual instruction. This survey provides the farmers with a means of determining whether or not their present systems will carry additional appliances and equipment and what must be done to provide capacity for several years hence. The use of an electrical demonstration board enables the instructor to give 17 different demonstrations which show inefficiency with inadequate wiring.

Farm Management Courses Offered

Farm management has and is continuing to receive special emphasis in our young and adult farmer programs. The other special instructor[4] in this school reports that two of his adult groups have adopted the Three Year Farm Business Management Program. Farm management will become the core of the instruction given these groups. Too, this instruction with the cooperation of a representative of the Soil Conservation Service has organized one of his adult groups into a Soil Conservation Association. This technique has worked so well that it is planned to organize the other groups in a similar manner.

The Platteville school has employed an instructor[5] to give full time to an adult farmer program for the past four years. In addition to special emphasis upon the keeping of farm records, the adult instructor at this school has promoted an outstanding swine improvement program. An outgrowth of one of the adult farmer classes in swine improvement held at this school was the organization of a Cooperative Swine Testing Station.



Station manager Clifford Olathafer and Instructor B. R. Dugdale of Platteville checking weights at the testing station.

At this station two pigs from a litter are placed on test when weighing about 60 pounds. They may be gilts or barrows. Accurate records are kept on the feed consumed and the weights are periodically recorded. As the pigs reach the 200 pound mark they are

[2]Reported by Avery Marshall, Adult Instructor, Richland Center, Wis.

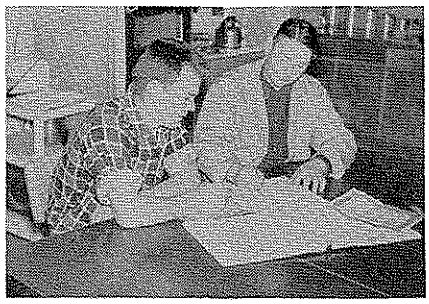
[3]Reported by James Zepplin, Adult Instructor Wausau Vocational School, Wausau, Wisconsin.

[4]Reported by Reuben Roehl, Adult Instructor, Wausau Vocational School, Wausau, Wisconsin.

[5]Reported by Bryan Dugdale, Adult Instructor, Platteville High School, Platteville, Wisconsin.

slaughtered and the carcass figures are returned by the packer. The litter mates of the tested animals are checked on the farm for back fat and are weighed at five months. Breeders consign litter mate boars and gilts to a sale and prospective buyers have made available to them the information that has been obtained by the testing station.

Other adult farmers enrolled in the adult farmer classes at Platteville are doing swine improvement under the Wisconsin Swine Selection Plan. Under this plan the pigs are weighed and probed for back fat at five months. The results are sent to the Genetics Department at the University of Wisconsin where an index is determined for each pig. These index figures are used by the farmer in selecting his breeding animals. □



Instructor Avery Marshall reviewing forage analysis report with a young farmer at Richland Center.

Spoon feeding in the long run teaches us nothing but the shape of the spoon. —E. M. Forster

You Will Enjoy Retirement if . . .

LOUIS SASMAN, Formerly State Supervisor of Vocational Agriculture
Madison, Wisconsin

Since I retired two and a half years ago I have had to learn to live a new life.

Our family has been fortunate in that for the past 25 years we have had a cottage in the Chequamagon National Forest in northern Wisconsin. On the day that my retirement became effective, we headed North. Our home was rented for a year—unfurnished—with all of our furniture and most of our belongings stacked in one room. We stayed in the North for about six weeks—until toward the middle of October—at one of the most delightful times to spend in the North.

Then, we had a daughter, a son-in-law and four grandchildren in Topeka and we headed that way about the first of November to stay until Thanksgiving.

From Topeka, the 1st of December, we headed toward the wide-open spaces for another daughter, son-in-law and granddaughter in Phoenix (some of these things take some arranging). We spent most of the winter with them. On Good Friday, five of us went up to Grand Canyon and, on Saturday, hiked down the Kaibab Trail, a distance of eight miles, and out over the twelve miles of the Bright Angel Trail on Sunday. Early in April, we went on to California and worked our way north with stops at Davis, California and Corvallis and Eugene, Oregon, and returned to Wisconsin through Yellowstone National Park and the Black Hills, getting back to our cottage about the middle of May.

Travel by Freighter

We left Chicago in October, on the freighter Pinemore, a 3200 ton ship, and went through the Great Lakes and the St. Lawrence Seaway to London.

We spent a couple of weeks in England, most of it in London at the home of a former secretary of mine in Egypt. We spent several days with the family of a young farmer near Warwick in the Stratford country and then with another near Durham in northeastern England. Both of these young farmers had been exchanges with FFA members in Wisconsin.

From England, we went by train and ferry to Copenhagen and I satisfied a long-time desire to visit one of the Danish Folk Schools and also an agricultural school. From Denmark, we went to Stockholm for a couple of days and then to Finland where we spent a very pleasant week as guests of a young psychologist who had been our guest a few years ago when she was in Wisconsin studying some of our psychological procedures and psychiatric institutions.

From Finland, again by ferry and train, we went back to Copenhagen and then spent the remainder of the year in Europe and in Egypt.

Finally, on January 24th, we took the Italian liner, the Leonardo Da Vinci, for New York, where we arrived on February 1. I might add that all of our ship travel after leaving the freighter was tourist class but the accommodations were, to us at least, very satisfactory. Freighter travel provides highly first class service.

Between the time when we left Madison in September 1960 and our arrival in New York on February 1, 1962, our daughter's family had moved from Topeka to Washington. So, we now spent seven weeks in Washington. We had, of course, been there many times before but never when we were as carefree as now. So, we saw more of Washington than we ever had before. We finally got back into our house the first of September. Previous to that time and since, I have been acquiring some skills which are adding to my satisfaction with life.

Chair Caning and Bread Baking

For a number of years, I had wanted to learn to bake bread! Mrs. Sasman had not thought it was a man's job but, in the fall of 1961, I finally persuaded her to give me some instruction. As a result, I have baked all of our bread since that time. I have not had any that was not good and most of it has been excellent.

Then, last Fall, I enrolled at the Madison Vocational, Technical and Adult School in a course in chair caning. I have just finished caning a seat for a chair that was my Mother's and am beginning the refinishing of one that belongs to my granddaughter. In addition, I have refinished 8 or 9 pieces of furniture.

I am interested in President Kennedy's physical fitness program. For years, I have done from 10 to 25 push-

ups every morning. This winter, most every day, we have been taking a half-hour of exercise with Jack LaLanne. I average from two to three miles of walking a day although this winter that schedule has suffered some. Of course, I shovel my walks and driveway. We are looking forward to spring now with the opportunity it will provide for gardening.

I have been a member of Kiwanis for 19 years but, in the past, have had to be absent nearly half the time. Now, I am chairman of the agricultural committee and secretary of the conservation committee. We have been able, this winter, to develop some effective programs of value to Kiwanis, to vocational agriculture and to the community at large.

Since the beginning of the year, I have been State Director of the National Retired Teachers Association—another contributed service.

Important Decisions After Retirement

From the time a person begins to work, when he starts to school at five years of age, he should begin to engage in activities which help him to develop a well-rounded life and help to make the community in which he lives a better place for him and his fellowmen. If he has followed that procedure, he will have no dread of the time of retirement from his life's occupation or profession because, for many years, he will have been under great pressure to decide which activities he could engage in and which he could not. Now he is relieved of the one that has been demanding his primary attention.

There are a few special problems that arise. One of the first is financial. Because, unless one has been astute in his investments, his income will be considerably lower than it has been. And for most educators, unless they have been favored with nice inheritances, their investments will not provide an income equal to that which they have had. So, rebudgeting is one of the first order of events upon retirement.

Health problems are among the great problems that come with advancing years. Some of these problems can be met, too, by early planning, because proper habits of food and living are important factors in the maintenance of good health.

A third special problem of retirement is adjustment within the family. Throughout the married life of most of us, we have been away from home a major part of the time. Suddenly we are free to spend our time at home. Our wives do not retire but they may dread the thought of our retirement more than we do. They realize that, suddenly, after being quite independent for most of the day, they are going to have a husband around the house much of the time.

Stay Away from That Office

If the financial, health and family adjustment problems are satisfactorily managed, the remaining problems are those of disassociating oneself from one's work and then deciding in what activities to engage and how to proportion the time among them.

The first shock of separation from work may be acute. So, probably, the best procedure is to make the separation complete and effective at once. In most cases when a person retires, there is a tendency on his part and that of his fellow workers to continue his association with his work. To overcome that likelihood, it is desirable for the retiree to put himself in a position where he will not be called on. At a later time, when the cords of mutual dependence have been effectively broken and the wounds healed, some lines of communication may be re-established.

The next thing is to find occupations that will effectively fill the void left by dis-association with the job.

Many retirees find some other employment. There are many commercial concerns that are glad to secure the services of men who have a wide acquaintance in agricultural fields. Probably most men, when they reach retirement age, wish to escape the responsibility of a regular schedule.

Employment of a part-time nature is available in teaching in summer schools or in regular sessions. If one can write effectively, there are magazines that welcome articles. If one's health is good, the budget will permit, and one is so inclined, travel is perhaps the most enjoyable and profitable way to use some of the time available. A travel trailer and a little cooking equipment will make it possible for a couple to travel comfortably and almost as cheaply as they can stay at home. If they have in mind places across the seas, excellent conducted tours are available or, if they are fairly good at travelling, they can set out by themselves. The biggest cost in getting to Europe, of course, is that of crossing the Atlantic. After one is across, he can, if he wishes to establish himself in one area, live more cheaply than he can in the United States—also, of course, without some of the comforts.

Some people, as the years go by, feel the cold; or their health may be such that a warmer climate is recommended. Fortunately for such people, there are a number of areas in the United States—or Mexico—where warmth and sunshine are almost continuous. In those areas, as well as in others, there are developing various living projects for older persons.

Service Opportunities

The majority of people, probably, will desire to live as long as possible in their own home and community where they continue to maintain contact with their life-time associates. These associates will know, too, that they are there and will suggest many types of activities. The churches continually need help in the various phases of their programs: such as stewardship week, calling on the sick or the shut-in, serving on the Boards, leading adult classes or providing guidance for youth.

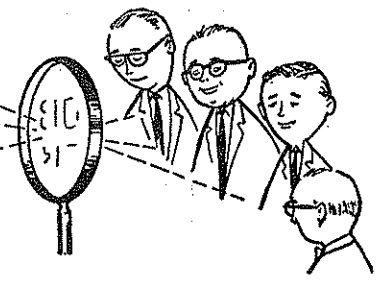
Perhaps Lodge activities have long been neglected because of the pressure of work. Now there is opportunity to assist with the ritual or with various benevolent activities. In most communities, there will also be opportunity to engage in various purely recreational activities. There may be Senior Citizen's Clubs: discussion groups, camera, travel or card clubs, dancing parties and activities of many other kinds. These, too, can occupy just as much of one's time as he wishes.

If one has been a member of a Service Club, he may wish to continue his membership and increase his activity now that he has more time to give to it. Most men like some sort of outdoor activity—fishing especially—and have wished for years that there was more time available for it. Now the time is available and many pleasant hours can be spent enjoying close association with Nature. Of course, recreational activities are probably not enjoyed quite as much when there is unlimited time for them as they were when they had to be crowded in between periods of hard work.

As far as I can see ahead, our program is about the same as it has been for the past two and a half years. We recommend your preparation for an active retirement. □

Live every day of your life as though you expected to live forever.
—Douglas MacArthur

BOOK REVIEWS



FARM SHOP PLANS AND STUDENT NOTEBOOK, Carlton E. Johnson. The Interstate Printers and Publishers, Danville, Illinois, Revised, 1963, pp. 349.

Dr. Carlton E. Johnson's revised edition of the 1963 FARM SHOP PLANS AND STUDENT NOTEBOOK is contained in a durable three-ring notebook cover with excellent quality paper.

In addition to the suggestion on organizing a Farm Shop Course, Farm Shop Abilities and other areas of this nature, Dr. Johnson has included a section dealing with the Home Shop, A Suggested Tool List for Your Home Farm Shop and Farm Shop References.

This publication contains 349 pages. The last 262 pages are devoted to farm shop plans and blank pages for notes.

The plans for projects are drawn to scale in a most detailed manner along with a bill of material needed for each project. Following the project plan is given a page entitled "Project Construction Procedure" with a lesson plan form for the student's use in doing the project.

H. T. Pruett
Auburn University

FARM BUSINESS MANAGEMENT by E. D. Chastain Jr., Ph.D., Associate Professor of Agricultural Economics; Joseph H. Yeager, Ph.D., Professor of Agricultural Economics; and E. L. McGraw, M.S., Associate Agricultural Editor, all of Auburn University. Auburn Printing Company, Auburn, Alabama, 176 pp., 1962. Price $2.50, five or more $2.00.

Complete enough for a basic text in farm management, yet simple enough to be understood by high school students and farmers are outstanding attributes of this new book. It stands alone in its usefulness for teaching economic principles and management concepts in a practical context at the high school level.

This book contains only 176 pages, but there is surprising scope and depth. The organization of the book is logical and seeems appropriate for the organization of a farm management course. Chapters are entitled:

The Management Challenge
Agriculture as an Industry
Getting Started in Farming
Selecting, Appraising, and Buying a Farm
Credit and Its Wise Use
Prices
Marketing
Farm Business Analysis
Farm Reorganization
Farm Labor and Mechanization
Family Resource Use Alternatives
Economic Development

There are thought-provoking questions and suggestions for student activities following each chapter.

The book was pretested in high school classrooms and was written to meet specific needs of teachers of vocational agriculture.

Earl T. Carpenter
University of Missouri

APPROVED PRACTICES IN SHEEP is written by Dr. E. M. Juergenson, Department of Agricultural Education, University of California. The book is published by Interstate and sells for $3.25 per single copy and contains 360 pages.

This book furnishes a comprehensive list of approved practices in sheep production and gives information on how they should be done. Much of the information can readily be adapted and used throughout the country. The book should be helpful to those who desire to enter the sheep industry in addition to farmers and vocational agriculture students interested in efficient sheep production. This would be a good book to use as a reference book for boys enrolled in vocational agriculture classes. Some of the things covered in the book are: Selecting breeding stock, Breeding and improving sheep, Raising lambs, Feeding, Shelter and equipment for sheep, Controlling parasites and diseases, Marketing, Record, and Butchering.

William Judge, Supervisor
Agricultural Education
Kentucky

COPPOCK, JOHN Q., North Atlantic Policy—The Agricultural Gap. The Twentieth Century Fund, July, 1963, pp. 270. Price, Cloth $4.00, Paper $2.25.

The author feels that protectionist policies for agriculture adopted by governments of the North Atlantic area are a major threat to further progress toward European unity and an integrated Atlantic Community.

He develops this theme by means of analysis and examples and points out that agriculture is no longer the "truest example of a free competitive industry." Instead it is subjected to a "rigged market," either by governments or by governmental sponsored associations.

For vocational agriculture teachers and advanced students, the book should stimulate new thinking on the economic problems confronting agriculture and the policies of the North Atlantic governments.

Raymond M. Clark
Michigan State University

INSTRUCTIONAL AIDS, HOW TO MAKE AND USE THEM. Nelson, Leslie W., William C. Brown, Publisher, Dubuque, Iowa. Third Printing, 1961. Price $3.50.

While written primarily for teachers in the elementary grades, high school teachers will find many excellent ideas and techniques for the preparation and use of instructional materials. Many of the ideas suggested in the book are of a type which students, themselves, can prepare. Preparation thus becomes a method whereby students can demonstrate their own understanding.

The book consists of 259, 8½ x 11 pages in a spiral bound paper cover. The appendix lists many additional references on instructional aids and sources of instructional materials. The book should be a valuable reference for teachers of vocational agriculture who want to liven up their instructional program with a wide variety of aids.

Raymond M. Clark
Michigan State University

Promote, then, as an object of primary importance, institutions for the general diffusion of knowledge.

—George Washington

PLANNING WATER SYSTEMS FOR FARM AND HOME by G. E. Henderson and others of the Southern Association for Agricultural Engineering and Vocational Agriculture. Available from the Association Coordinator's Office, Barrow Hall, University of Georgia, Athens, Georgia. 105 pp., 1963. Price $2.60.

This is a revision of the 1955 publication and includes the latest research information on planning water systems for farms and rural homes. The sections dealing with water disinfection and improvement of water quality—minerals, sediment, taste and odor—have been greatly expanded.

The publication is written in nontechnical language and is very well illustrated. It is another good addition to the fine family of publications and filmstrips produced by SAAE & VA.

Guy E. Timmons
Michigan State University

News and Views of the Profession

Officers and members of NVATA attending a Region III meeting at Fargo, N. Dak. June 24. Region III of NVATA includes the states: Iowa, Minnesota, Nebraska, North Dakota, South Dakota and Wisconsin.
The annual summer Regional meeting is held primarily to strengthen state associations in the Region and to unify efforts of NVATA. Presiding was V. D. Rice—Vice President of Region III—NVATA—Williston, N. Dak.

From Former Issues

In May, 1943, O. C. Aderhold wrote: "As the war stretches out over another year, we shall see greater and more specific needs in the field of agriculture develop. Certain enterprises and activities will become relatively more important. More oil and fat producing enterprises will be needed. Machinery will be in greater need of repair. Our job is to provide a training program that will produce teachers who can effectively carry on this program and meet this need especially with adult farmers. This means intensive training for the regular teacher on the job and the many OSYA teachers.

November, 1931—John J. Skinner, Superintendent of Owatonna Public Schools, Owatonna, Minnesota, wrote: "The Future Farmers of America may afford certain decided advantages. It is going to be easy, however, for the original purposes of the local clubs to be obscured, and for the main interest to be centered in the organization itself, in the electing of officers, and the choosing of delegates for conventions. Remembering that the purpose of agriculture as a department of instruction in high schools is to prepare farm boys to become better farmers, it is important that the function of the agriculture club be not diverted to the support of something else."

Hubert Burnham Jr. (third from left) representing Sears-Roebuck Foundation presented gold wrist watches to (left to right) Vernon O. Horne of Salem; Walter Hansen of Spring Valley; H. Burnham; Ken Wall of Ellsworth; Don Halado, Meshicot and J. A. Olson of Luck for having completed twenty-five years of teaching Vocational Agriculture in Wisconsin.

N.V.A.T.A. News

James Wall
Executive Secretary

Atlanta City, New Jersey will be the scene of the 16th Annual Convention of the NVATA. The first general session will be called to order by President Wenroy Smith at 10:00 A.M. on Saturday, December 7.

On Saturday afternoon, starting at 1:00 P.M., a special program has been arranged. Hearing a panel on—"Developing Good Public Relations" will be Louis H. Wilson, Director of Information, National Plant Food Institute, Washington, D. C. Other members of the "all star" panel will be Mr. Phil Alampi, New Jersey State Secretary of Agriculture, Mr. Carroll Streeter, Editor, Farm Journal, Dr. Oliver Willham, President, Oklahoma State University, and Mr. Roy Battles, Executive Director, Clear Channel Broadcasting Service.

Those attending are urged to arrive in time to attend this program which promises to be one of the highlights of the entire convention.

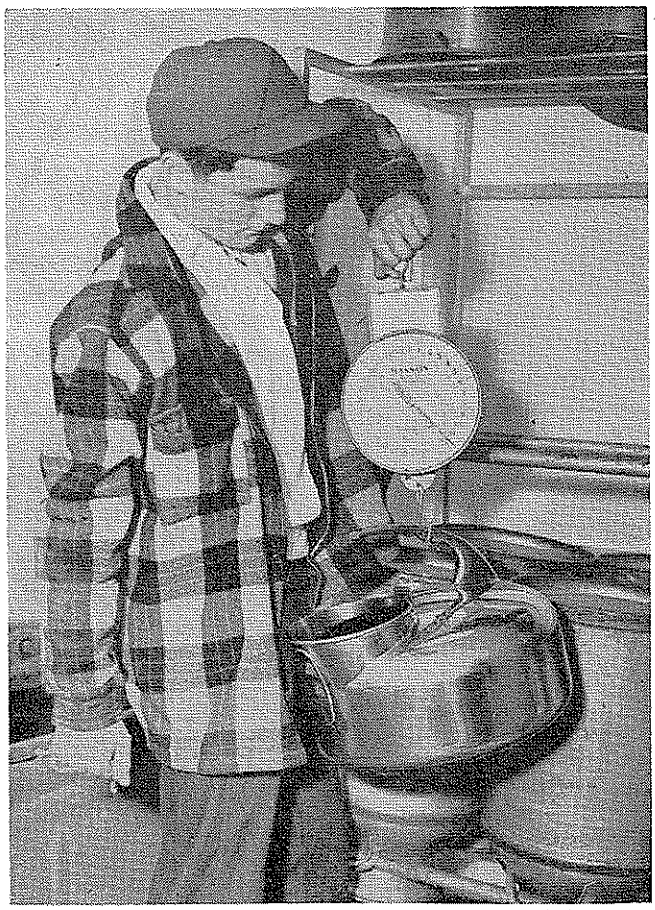
Delegates will have the opportunity of attending two more general sessions and two regional meetings. Also, each delegate will have occasion to participate in one of the following four group meetings: (1) Membership Relations, (2) Communications, (3) Planning for the Future of NVATA and (4) A Public Relations Forum.

A number of meal functions have been arranged for including breakfasts sponsored by A. O. Smith Harvestore and Allis Chalmers, luncheons by International Harvester and A & P Foods and the NVATA State President's Dinner by Swift and Company. Region VI of NVATA will be hosts at a reception on Sunday evening for the Combined Agricultural Education groups.

Past NVATA officers will have a short meeting to be followed by a dinner on Monday Evening, December 9. H. E. Throckmorton of Milton, West Virginia, president of the past officers group, will be in charge of arrangements.

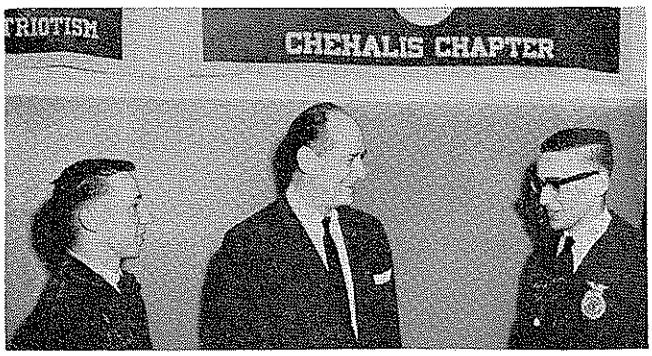
The program has been arranged so that a large part of the NVATA convention will be held on Saturday and Sunday which should give ag teachers within a 200-300 mile radius of Atlantic City an opportunity to attend without losing time from their classes,

Stories in Pictures



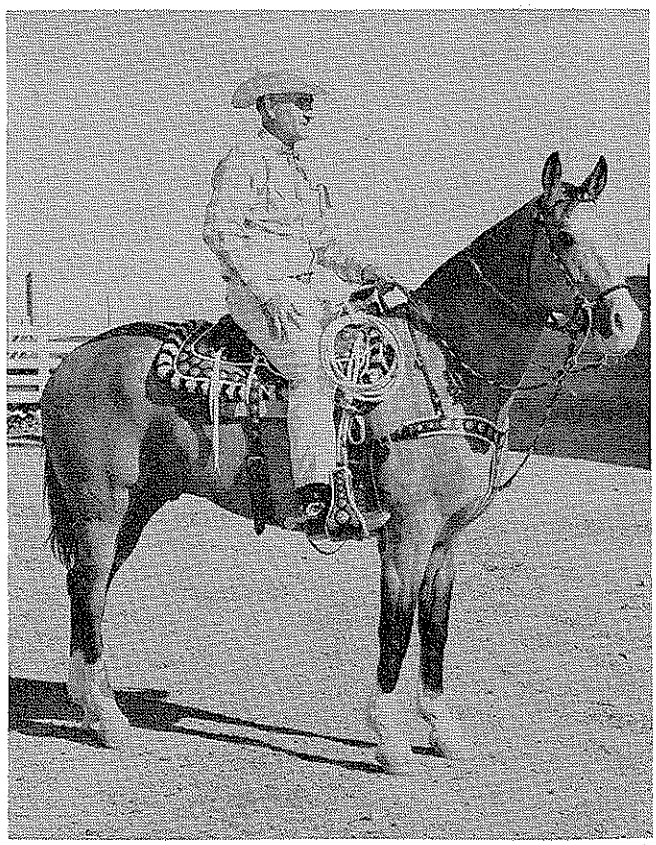
Wisconsin Vo-Ag student, Leonard Thiede places a pail on the scale to weigh the production of one of the 24 cows in the Thiede's herd. Leonard is a senior student at the Granton High School, Granton, Wisconsin, and tests each month at the school laboratory along with 75 other testers. Photo by Francis Steiner

Bill Larsen, left, of Moriarty, New Mexico, receives the first $100 Scholarship from the New Mexico Vocational Agriculture Teachers' Association from Charles Morrison, NMVTA Vice President. The scholarship is awarded to help defray expenses of a student majoring in agricultural education at NMSU. (Bill's older brother, Don, is a junior presently majoring in Agricultural Education at New Mexico State University.) Photo by L. C. Dalton



Washington State's Governor Albert D. Rosellini visits with Fred Richardson, Chehalis and Karl Salzsieder, Toledo, at a Future Farmer Leadership Conference. Later in the month Karl was elected State President and the Governor was made an Honorary State Farmer.

NVATA members attending the Region II Summer Conference at Hutchinson, Kansas, June 20-21 participated in an agricultural tour which included visits to the Farmers Co-operative Commission, Farmers Co-operative Elevator, Bulgar Plant, and the Ark Valley Co-op Dairy Association. The Kansas Wheat Commission also entertained the group with a buffet dinner.



Activities of the old west are the hobby of C. T. Grable, assistant state supervisor of New Mexico, who is shown mounted on his quarter horse. A long time superintendent of the Rodeo Queens contest at New Mexico State Fair, "C. T." is also a member of the Cowboy Polo Club and the Sheriffs Posse at Las Cruces where he lives. He is also the owner of an extensive collection of hand guns and rifles of the early west.