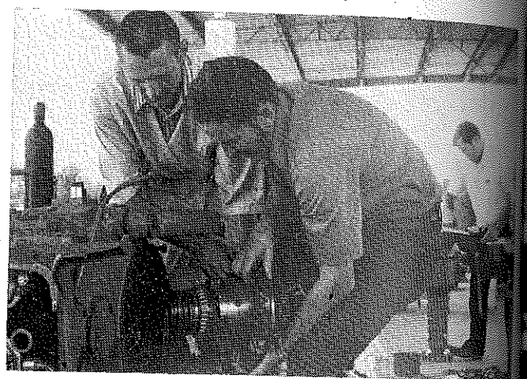
MSU Professor Donald O. Meaders, secondary education, presents Dr. H. Paul Sweany with one of several awards given him at his retirement fete during the Michigan MATVA seminar held the latter part of July. Shown next to Dr. Sweany is his wife.

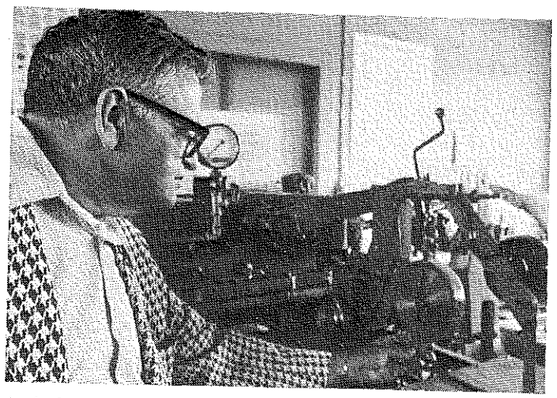
Edward Slettom, left, executive director of the Minnesota Associa tion of Cooperatives, visiting with Jack Lindner, supervisor of the Learning Resources Center at University of Minnesota-Waseca, after presenting two volumes of RISE OF AMERICAN COOPERATIV ENTERPRISE to the Center.

Stories in Pictures

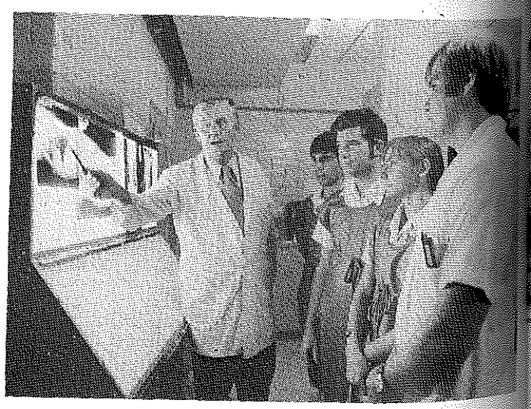
by McMillion



Participating in the Ford Tractor Workshop, University of Arizona are Mr. Gail Deal, Tempe, and Mr. Fred Amator, Aqua Fria Union Avondale. In the background is Mr. Jim Brown, Peoria. All are teachers of vocational agriculture in Arizona. (Photo by Clinton Jacobs)



Agricultural mechanics and crops highlighted recent Swiss tour for Charles Schettler of Wapella, Ill., who was the National Vocational Agricultural Teacher's Association winner of a Ciba-Geigy Agricultural Recognition Award. Schettler worked machinery at the Cantonal School of Agriculture in Morges, Switzerland.



Dr. W. C. Banks (left) is dedicated to producing the best possible radiograph. Here he points out the delineation of detail in an x-ray study to students gaining first-hand experience in radiology toward their DVM degrees at Texas A&M University's College of Veterinary Medicine. (Photo by Eastman Kodak)

Agricultural Education

January 1975 Number 7

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Theme—URBAN AGRICULTURAL PROGRAMS

The
Agricultural Education
Magazine

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Vol. 47 January 1975 No. 7

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Send articles and pictures to the Editor or to the appropriate Special Editor.

COVER PHOTO:

What's an International farm tractor doing beside a twenty-story building in New York City? The students are farming a 3.8 acre land laboratory at John Browne H.S. that also has a poultry house. For details, see the article by George Chrein in this issue.

Editorial

From Your Editor . . . THE SCHOOL FARM IN 1975

Martin B. McMillion

School owned animals, plants, and facilities are necessary to provide the opportunity for city students to obtain practical experience they otherwise could not obtain. The nature of the background of the agriculture student population has increased the dependence upon school-owned laboratory facilities. The school's shop, greenhouse, farm, arboretum, forest, lake, nature trail, game preserve, grounds, golf greens, etc. are more important now that a smaller percentage of the students can have access to facilities away from the school.

Rufus Stimson, the father of the home project idea, might not have sold the school dairy herd of Smith's Agricultural School at Northampton, Massachusetts if the year had been 1975 instead of 1907. Agricultural schools of that day normally were boarding (dormitory) schools in which students did the farm work. Undoubtedly, much practical learning took place as well as work, nevertheless, the term "compulsory student labor" was used by Stimson and others to describe the situation.

High schools were becoming more numerous and actually nearer to home farms as well as nearer in travel time because of improved roads and the increase in automobiles. Young Stimson argued that, "boys were coming in the morning from farms bristling with dairy farming problems, and returning to those farms in the afternoon, and that he did not want them or their instructors thinking for a moment about school-owned cows."[1]

Unquestionably, supervised occupational experience programs in an actual business setting, whether ownership projects or employment, is the ideal. However, the possibility of experience programs in actual business settings is greatly exceeded by the numbers of students enrolled in high school agricultural programs. In many locations and situations, experience in an actual business setting must be considered a "capstone" for the final year of agricultural study. We know what is best, but there is not enough of it to go around.

Mistakes have been made over the years in the use of school-owned facilities. Student exploitation such as that in the boarding schools of the early 1900's in this country and the present exploitation in boarding schools of the developing countries must be avoided. To avoid it, first, a school's laboratory facility should not be expected to be self-supporting. Making a profit and good teaching of agriculture on a school farm and most other laboratory facilities cannot easily happen simultaneously. Unskilled and inexperienced individuals, being neither proficient or efficient, cannot make a profit for the school. To keep students on the same task long after they become proficient is exploitation, not education. The funding of a school laboratory facility—farm, greenhouse, school grounds or forest—should be such that free labor is discouraged.

Use of individual or group student ownership projects in or on school laboratory facilities is the alternative that will increase student morale, interest and learning. Another useful procedure for school- or FFA-owned enterprises is to actually hire some of the students who have become proficient through use of work-study money or money made from the enterprises. The profit sharing idea of giving student workers a bonus based on the productivity of the enterprise is also a good practice.

With extensive school laboratory facilities, a manager or teacher aide can be well justified, but it is a good practice for every teacher to be a part-time laboratory manager. The teacher should be involved extensively with the laboratory facility related to his teaching. I say this because I once visited some dormitory schools in Brazil where students were in the classrooms with their teachers in the morning and with the farm manager in the afternoon. The teacher hardly ever saw the farm manager or the farm. The obvious lack of coordination in this situation could occur in some high school situations in this country and the possibility in two- and four-year colleges is more likely.

Another practice that will assist in giving students a good experience in school-owned facilities is the use of a checklist of experience which are to be gained. This checklist could take the nearly identical form of a cooperative education training agreement or the form of a shop progress chart on which skills are graded and checked off. Regardless of the pattern followed, individualization of the activities should be allowed.

In summary, the school farm or other laboratory which is second best to home farm or other agribusiness settings is the best alternative we have for many of the students we serve. Some suggestions for using laboratory facilities follow. School laboratory facilities should not be expected to be profit making. With school farms and other laboratory facilities, the teacher of the related subject matter should be the manager of the facility. Individual or group ownership projects in or on school laboratory facilities should be encouraged as a way to improve interest, morale and learning. Once students have repeated activities sufficiently to become proficient, they or somebody else should be paid to do the work. An individually prescribed plan of experiences to be gained in the school laboratory situation similar to a good cooperative education training plan should be used.

—MBM

[1] Rufus W. Stimson and Frank W. Lathrop, *History of Agricultural Education of Less Than College Grade in the United States*, Vocational Division Bulletin No. 217, Agricultural Series No. 55, U.S. Office of Education, 1942, P. 386.

New Special Editors

New International Editor

Gordon Swanson

Dr. Gordon I. Swanson is a Professor of Agricultural Education and Director of Graduate Studies in the Department of Vocational Education at the University of Minnesota. Service as a vocational agriculture teacher preceded his university faculty appointment. Since joining the faculty he has taken leave on two occasions, once in 1959-60 to accept an appointment with the UNESCO Secretariat in Paris, France and again in 1973 to accept a Fulbright Fellowship for study in the Federal Republic of Germany. Maintaining a continuous interest in an international perspective, he continues to serve on the Joint FAO/UNESCO/ILO Advisory Committee on Agricultural Education and Training.

Professor Swanson is Chairman of a major Committee of the National Academy of Sciences now reviewing the ten-year record of research and development in the Department of Labor and preparing to recommend guidelines for the future direction and scope of the Department's R&D. He is also a member of a parallel National Academy Committee reviewing and evaluating research and development in vocational education.

Active in teacher education and professional development, Professor Swanson is Director of the National Project coordinating the advanced leadership fellowship program (EPDA, Part F, 552) now operating in 28 universities. Included in this project is the work of the National Resource Panel on advanced professional development.

Professor Swanson will serve as guest editor for the October 1975 issue of this magazine.

New Historical Editor is Clarence Bundy

The new historical editor for the *Magazine* is Clarence Bundy, Professor Emeritus and former chairman of the Department of Agricultural Education at Iowa State University. Professor Bundy began teaching Vocational Agriculture in 1929 and was active as teacher, administrator or teacher educator until his retirement last year. He now maintains a consulting service for agricultural and educational clients. Among the list of his numerous leadership roles are president of IVATA, chairman of the AVA Teacher Education Council, and president of the American Association of Teacher Educators in Agriculture. He is co-author of numerous livestock books which are revised regularly, and he is co-author of *Methods in Adult Education* which has recently been revised.

Professor Bundy is a swine judge of note, having judged at such places as the Iowa, Minnesota, and Wisconsin State Fairs and National Duroc Type Congresses.

New Picture Editor

Jasper Lee

Jasper S. Lee o
Virginia Polytec
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State Universit
Blacksburg, Vi
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pointed as Pictur
Editor for th
Magazine.

The new Pictur
Editor has Bach
lors and Masters degrees in Agricu
tural Education from Mississippi Sta
University and the Doctor of Educa
tion degree in Vocational Educatio
from the University of Illinois. He
currently Associate Professor of Agr
cultural Education at VPI & SU,
position he has held since Septembe
1973. He has previously served as
teacher of agriculture in Mississip
and with the Department of Agricu
tural Education and Curriculum Co
ordinating Unit at Mississippi Sta
University. He has considerable exp
rience in developing curriculum an
instructional materials for agricultur
education, career education, and voc
tional education. He has authored
number of articles and publication
including a book entitled *Commercia
Catfish Farming*. He and his wif
Delene, have two children.

In the role as Picture Editor, Le
will have the responsibility for solici
ing and arranging photographs for th
cover and "Stories in Pictures."

He replaces Richard Douglass of th
University of Nebraska, Lincoln.

(Others on page 16

Themes For Future Issues

February —	**Programs in Natural Resources**	**July —**	**The FFA**
March —	**Utilizing Resources in Teaching**	**August —**	**Serving Out-of-School Groups**
April —	**Informing the Public**	**September —**	**Guidance, Counseling and Placement**
May —	**Teaching the Disadvantaged and Handicapped**	**October —**	**International Agricultural Education**
June —	**Women in Agricultural Education**		

Agricultural Career Education in the City of New York

George Chrein, Coordinator
Agricultural Career Education
Office of Career Education
Board of Education
City of New York

George Chrein, the author of this article, (right) confers with teacher and students of ornamental horticulture in Prospect Park.

Scope of the Agricultural Programs

More than one thousand boys and girls in ten high schools throughout the City of New York are presently enrolled in one of our agricultural career programs. Students have the opportunity of selecting a program specializing in Farm Production and Management, Ornamental Horticulture, Animal Care, or Conservation. Our goals in each of these offerings is to (1) open the career doors as widely as possible so that students become aware of the broad spectrum of occupational opportunities from the entry level to the professional careers (2) provide "hands on" occupational skill experiences for the entry level occupations and a firm technical background for those who choose to continue their occupational education in the post-secondary schools (3) provide a job placement service to enable students to fulfill the required work experience program.

Advisory Commissions

To help keep our programs meaningful, realistic, and on target in serving the needs and interests of our student population, three advisory commissions were organized representing Ornamental Horticulture, Animal Care, and Conservation. The men and women serving on these commissions are outstanding leaders from the "trade," professions, and education in each of the aforementioned disciplines. Some of the noteworthy accomplishments of the advisory commissions are as follows: (1) a thorough review of our pilot courses of study resulting in many fine practical suggestions and recommendations, (2) locating suitable training centers and jobs for our students, (3) suggestions for improving facilities and updating equipment, (4) reviewing current budgets and assisting in the preparation of future budgets, (5) providing "career speakers" for each program, (6) arranging field trips to establishments that would otherwise be very difficult to get into, and (7) providing liberal scholarship incentive awards to the outstanding graduates of the agricultural career programs.

Farm Production and Management

The only facility offering a program in Farm Production and Management is at John Bowne High School. The school boasts a 3.8 acre land laboratory, a well equipped agricultural mechanics shop, and classrooms for recitation purposes. The land laboratory is so organized as to provide real production and management experiences in poultry, fruit, and vegetable crops. The three-year instructional program is not limited to the experiences afforded to the students on the land laboratory or agricultural mechanics shop. Thus, animal science, field crops, woodlot management, land use and conservation, and leadership training (FFA) are included in the overall instructional content. Students are required to spend the entire first summer (prior to starting their sophomore year) on the land laboratory. A highly structured summer program is offered relating to career guidance and orientation and provides "hands on" skill experiences in each of the occupational areas available on the land laboratory. The school provides a farm placement service for the students during their remaining two available summers. More than ninety percent of the graduates of this program continue their agriculture occupational education in the post-secondary schools. The alumni records indicate a very substantial number presently employed in all of the agricultural disciplines (i.e. farming, veterinary medicine, teachers on the high school and college levels, cooperative

(Continued on next page)

(Chrein—from page 149)

extension agents, landscapers, foresters, agricultural business, government jobs with the USDA, etc.)

Ornamental Horticulture

Six of our high schools offer programs in Ornamental Horticulture. The instructional content of these programs include career guidance and orientation, business management, greenhouse management and production, landscape planning and maintenance, floral arrangement and design, nursery production and management, turf growing and maintenance, and related mechanics and construction. While the goals for each program are similar, the methods of implementation will vary with the needs, interests, and characteristics of the student body, the available physical facilities, and quite frankly the strengths and expertise of the teachers. One program is based upon a three-year sequence. The junior and senior years are organized on a cooperative education plan. Each student, during these last two years, is placed by his or her teacher in a "training center" so that one week is spent on the job (for which the student is paid) and the alternate week is spent in school. Thus, each job is filled by two students enabling the cooperating employer to have full-time coverage. Places of employment include: garden centers, retail florists, wholesale florists, botanical gardens, public parks, golf courses, cemeteries, arborists, landscape firms, etc. Fortunately for our students, a time provision has been made for the teachers of ornamental horticulture to develop suitable jobs, place his students, and visit the students on their jobs. The instructional program during the junior and senior years is individualized and flexible to meet the occupational skill needs and goals of each student as these are identified by the student, teacher, and employer.

Not all of our ornamental horticultural site facilities include a greenhouse, land laboratory, and related mechanics shop. At Boys High School, for example, students are using a large converted science laboratory room. With the full cooperation of the Parks, Recreation, and Cultural Affairs Commissioner, a work experience program was designed in concert with Park Department personnel to enable the students to use nearby Prospect Park to obtain their real "hands on" experiences. Students pruned trees and shrubs, seeded, sodded, limed, fertilized, sprayed, etc. The program at the Bronx High School of Science is now in its second year. Facilities include two greenhouses, a plot of land just across the street from the school and nearby Inwood Hill Park. There is no doubt but what the overwhelming majority of these gifted and academically oriented students will continue their ornamental horticulture occupational education in the colleges and graduate schools.

Collecting eggs at John Browne High School

Animal Care

Animal care programs are going strong in two of our high schools. The instructional content includes guidance and orientation, business management as it relates to pet shops and veterinary establishments, fish, amphibians and reptiles, birds, mammals, and laboratory animal procedures. In one school, we are planning to inaugurate a cooperative educational plan during the senior year—one week on the job and the alternate week in school. Thus far we have been successful in placing current students for part-time employment and graduates for full-time employment in the veterinary hospitals, pet shops, animal facilities associated with the medical schools, animal laboratories in the private sector, zoos, animal grooming establishments, animal training centers, etc.

There is no doubt but what the overwhelming majority of these gifted and academically oriented students from the Bronx High School of Science will continue their ornamental horticulture occupational education in the colleges and graduate schools.

(Concluded on page 152)

Vocational Agriculture Brightens Future of Big-City Students

William E. Densham

The Walter Biddle Saul High School of Agricultural Science is a Pennsylvania public school that best can be described as out of place and out of the ordinary.

As the nation's only high school devoted strictly to agriculture-related programs, it is situated, paradoxically, within the borders of America's fourth largest city, Philadelphia.

It boasts an excellent attendance record, though truancy flourishes in many Philadelphia schools. In fact, young people clamor to enroll in this unusual school where rowdiness and violence are virtually non-existent.

Moreover, it has the largest Future Farmers of America chapter in the world with both male and female members.

Walter Biddle Saul High School of Agricultural Science is a four-year institution that draws students from all parts of the city — the ghettos, as well as the areas that neighbor suburban Montgomery, Bucks and Delaware counties. It is named for a former Philadelphia School Board president who was dedicated to agricultural education.

The school property covers 85 acres. Besides the main classroom building where students receive academic education, there are: a barn housing a herd of cows, a chicken coop, a pen for a flock of geese that chase people, a greenhouse, a farm-machinery building, a repair building and a small-animal laboratory. Storage sheds, experimental planting plots, pastures, a one-hole golf course with a practical purpose and an athletic field for intramural sports are also on the school grounds.

Adjoining the school property is Fairmont Park, owned by the city but used by students studying agricultural resources management. In essence, the park is an outdoor laboratory for students taking courses dealing with the use of inner city open spaces, including park management and ecology. Students have added several acres to the amount of usable land within the park by filling in ravines near the school.

This year 465 students are enrolled in grades 9 to 12 at W. B. Saul. Twice as many others applied but were turned away because there was no room for them.

How does W. B. Saul get its students? It is one of only three city schools permitted to draw on all city junior high schools without regard to school district attendance lines, therefore, its vocational guidance counselors are sent into all public and non-public junior high schools to explain the vocational agricultural program. About 10 per cent of the W. B. Saul student body comes from the non-public school ranks.

A "weeding-out" process is used in accepting students. First, students and their parents are interviewed to determine if agricultural science is their true interest or merely a passing fancy. Second, all prospective students entering the 9th grade are given 20 days of experience—as director Ralph Bartholomew calls it—of seeing vocational agriculture in the raw: tending cattle, cleaning barns and chicken pens, working in fields and doing other earthy chores that farm work requires.

This 20-day trial experience is held during the regular summer vacation to give students time enough to enroll in their neighborhood high schools if they decide that agriculture-related occupations are not for them.

"Most of the prospective students, raised in an urban setting, had never been on a farm before, much less worked on one," Bartholomew explains. "It is a strange experience for them and any dislike for farm-type courses is likely to show up during this 20-day period.

"We admitted about 125 9th graders last year although nearly 400 applied for admission. The students' need is the most critical factor we use in determining their acceptance to the agricultural program. But in choosing our freshmen we also consider their junior high school academic achievement, their occupational intentions and their previous attendance records," Bartholomew says.

"I might add that we give all prospective students the same chance, regardless of what part of the city they live in. We hold all our interviews on the same day that other vo-tech schools hold theirs."

All students are put through an exploratory phase of agricultural education during their freshman and sophomore years. This phase is intended to give girls as well as boys an opportunity to look at all facets of agriculture before they begin concentrating on particular sciences.

"We want students to have a good basic knowledge of all aspects of agriculture: the raising of plant crops, animal growth and care, the control of diseases and insects harmful to animals, the preparation of agricultural food products, and such ecological topics as soil conservation, air and water pollution control, grassland use, forestry, park maintenance and openland use," Bartholomew explains.

An agriculture school would hardly be an agriculture school without cows — and W. B. Saul has 35 registered Holsteins which students milk every morning. The evening milking is done by a resident farmer who also does many of the other chores while students are on summer vacation.

"We don't have many cows," says Student Council President Joe Zagorski, "but we have good ones, including prize winners. We students are now preparing pastures and sheds for sheep and pigs, building corn and hay cribs

(Concluded on next page)

(Densham—from page 151)

and stringing fences. All this is necessary farm work and it gives us good experience.

"We raise our own calves. From this we learn about the growth of farm animals, how proper feeding and care can produce healthier, more productive animals. We also learn about cattle breeding, which we now do through artificial insemination," Zagorski says.

Breeding and proper care are not restricted to the larger, barnyard animals such as cows, chickens and pigs, but also involve laboratory animals such as guinea pigs, mice, rats and hamsters. Laboratory animal breeding and care, though enjoyed by students, provide more practical lessons in biology and husbandry. There are employment potentials too. Metropolitan Philadelphia's many hospitals and drug firms use laboratory animals in experiments.

Inter-related with the sciences and technologies involved in the agriculture education program at W. B. Saul is the over-riding subject of management. All the students keep precise records on production, growth and harvest.

"Efficient agriculture management today cannot be attained unless precise records are kept and used," Bartholomew explains. "This goes for students in the meat cutting, floriculture and landscape horticulture programs as well as students in animal technology and farm production."

How do students react to W. B. Saul as a school?

Once enrolled they stick with the school. The dropout rate has been only about two per cent a year for the past three years — the lowest rate in the city's secondary school system.

Once students enroll, they stick with it. The drop out rate is the lowest in Philadelphia.

Bartholomew believes dropouts are few because students have set goals for themselves and are determined to reach these goals. The exceptionally low class-cutting rate, fewer than six a week, also reflects high goal-mindedness on the part of students, he says.

Other statistics also indicate that W. B. Saul students take their education seriously. About one-half of the graduates enroll in two-year or four-year colleges; 80 per cent of the students in the meat cutting curriculum enroll in cooperative programs where they work part-time during their senior year in businesses or institutions to gain on-the-job experience, with pay.

"Our school records show that most of the cooperative education enrollees become employed full-time upon graduation, often at the same places they received on-the-job experience. In general, our graduates have little trouble finding jobs after graduation, if going to work is their immediate goal," Bartholomew says.

The prospect for employment, of course, is strongly entwined with all the curriculum. If a course in turf-building may seem odd in a place characterized by pavements and tall buildings, consider the fact that there are 178 public and private golf courses in Philadelphia and suburbs, not to mention many parks and large estates scattered about the city.

"Our first students in turf-building will graduate this spring," Bartholomew points out, "and already we are getting calls from golf course proprietors and from private landscapers who are looking for knowledgeable workers.

"Our turf-building graduates won't have much trouble finding jobs but they do have trouble getting on-the-job training in their senior year. Transportation from school to golf courses is a major problem with most of them."

Bartholomew believes a well-planned curriculum leading to bright prospects for employment for students is essential to the success of the school. There are, he says, other factors.

"The Home and School Association, because it has been very interested in the school program, has done a good public relations job for us. Craft committees — composed of agriculture teachers, Home and School Association members, potential employers and even a few graduates — make practical recommendations on the type of equipment that is needed in the school. They recommend course content, sources of employment, field trip ideas and work-experience possibilities.

"But most crucial to the success of the school is the attitude of the students. When teens are willing to travel 15 to 20 miles from home to school each day, we know the school has meaning to them and to their futures."

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Reprinted from *Pennsylvania Education*, March-April 1972

(Chrein—from page 150)

Conservation

An exciting and most recent offering is our conservation program. More than one million dollars has been appropriated for restoration projects in Alley Park located in the Borough of Queens. Martin Van Buren High School, the closest school to Alley Park was selected as the school for our conservation program. Once again, with the full cooperation of the Parks, Recreation, and Cultural Affairs Commissioner, we will be working in concert with Parks Department personnel in establishing a wildlife refuge, nature trails, dredging, stabilizing stream banks, constructing ponds, and controlling soil erosion. The instructional content of the program includes career guidance and orientation, wildlife management, soil and water management, outdoor recreation, conservation mechanics, leadership development, and conservation business management.

Some Future Plans

We are still in the planning stages of attempting to use two of our schools, Sheepshead Bay High School and Beach Channel High School, for a career oriented oceanography program. The location of these schools with reference to easy access to the bays and ocean lends itself for an oceanography occupational skill development program. If approved, the instructional content will include career guidance and orientation, introduction to oceanography-biological, geological, chemical, and physical — and summer oceanography practicum.

At the present time, agricultural career programs are offered primarily to boys and girls of high school age. Plans are now being made to offer these programs to our adult population. Programs will be available to assist those adults already on the job who want to upgrade their skills and for those who want basic preparation to enter the vocation.

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VOCATIONAL HORTICULTURE IN CLEVELAND AFTER THIRTEEN YEARS

Peter J. Wotowiec, Supervisor
Horticulture Education
Cleveland Public Schools
Cleveland, Ohio

Peter Wotowiec

A pilot program in Vocational Horticulture for high school students was established in the Cleveland City Schools in 1961. From an original enrollment of 17 students, housed in the West Tech High School greenhouse, the program has grown to include programs in 8 high schools and one special horticulture education center with a total 1974 enrollment of over 600.

Beginning with a general horticulture approach designed to prepare high school age people for entry employment in any aspect of horticulture, the program has been revised and refined each year. Some parts of the horticultural industry which were expected to provide considerable employment of graduates never realized the projected potential. Other areas of the industry which at the time seemed to hold but limited employment potential provided far more opportunities than expected. Perhaps the most significant reemphasis made during the early years of the program operation was to shift from production horticulture to a service horticulture orientation.

Despite the fact that there are about 400 acres of greenhouses in the metropolitan Cleveland area, they provide only a limited number of jobs where competent graduates can expect to advance in responsibility and pay as they qualify through experience. In recent years, as the metropolitan area expanded in size, virtually all of the once important outdoor vegetable production acreage has disappeared. Because of these factors very little preparation of students for horticultural crop production careers is currently being done.

The major job opportunities in the Cleveland area for graduates of high school vocational horticulture programs exist in the service horticulture areas.

Poorly prepared students on placement result in negative public relations.

Landscape installation and maintenance, floral design and sales, garden center sales, and turf maintenance provide good jobs and pay. Each student still must acquire certain basic plant production skills with vegetables, herbaceous and woody ornamentals, but those skills are selected on the basis of their value to the ultimate goal of an occupation in service horticulture.

A competent horticulturist must not only be conversant with the technical information of his specialty, but must also have an intuitive relationship with plants. That relationship develops only through constant contact with living plant materials. You cannot learn horticulture in the classroom alone. Major emphasis is placed on consistant involvement of students with living plants in the Cleveland Program.

Successful employment in service horticulture calls for yet other competencies. Unlike production horticulture where contact with people is limited, the employee in service horticulture has daily contact with business customers. Whether he deals directly with them as in sales, or if he is part of a landscape maintenance crew, he is highly visible to the customer. The vocational horticulture student must develop human relations skills and be able to communicate effectively in a business-like manner.

An understanding of business operations is also necessary for horticulture service employment. Computational skills, money handling and basic record keeping are as vital in many jobs as horticultural skills and knowledge. Over the years the curriculum in the Cleveland Vocational Horticulture Program has changed significantly from a predominance of technical horticulture to a balance which is adjusted to our job markets of technical horticulture, human relations and business operations.

Successful employment of Vocational Horticulture graduates is based on the needs of the industry. The original approach in Cleveland was to provide each student with traditional technical knowledge and skills. It met with limited success when measured in terms of entry-level employment of graduates. Emphasis is now placed on preparing students to meet minimum standards in specific competency areas based on industry needs. Student capabilities must still be considered, and in some instances are limiting factors, but the net result is a higher placement rate of better prepared graduates.

Students who enter the Vocational Horticulture programs in the Cleveland schools have, in the majority, limited experience in working for pay and as a consequence, their work habits are in need of improvement. Progress in this area must begin with the example set by the teacher who must treat his own job in a most professional manner. Each student is assigned responsibility for certain operational procedures at the school horticultural facility. At first the primary responsibility may be limited to growing a small number of pot plants or the maintenance of an outdoor bed. As knowledge and skills increase, so do the responsibilities. Advanced students may have responsibilities such as crops of pot plants, making floral arrangements or corsages for school events, or the design and installation of landscape plantings.

Placement of students in industry on a part-time basis is done as soon as they qualify by law and have acquired the attitude, skills and knowledge necessary to profit educationally from the experience. The right to placement in industry is not automatic, but must be earned by the student. This ap-

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Agriculture Comes to the City

Boyce Miller
Vo. Ag. Teacher,
Baton Rouge, Louisiana


Boyce Miller

The program of instruction in Ornamental Horticulture, as a specialized version of Vocational Agriculture, was instituted in the Capitol High School of Baton Rouge, Louisiana at the beginning of the 1967-68 school term. It marked the first venture into an instructional program in agriculture in a Baton Rouge city school and one of the very first such programs in any city high school in the State of Louisiana.

Another first was recorded as far as Capitol High School is concerned. Capitol, at the time was an all-black school, serving a large black ghetto area of Baton Rouge. Court-ordered integration, as applied to East Baton Rouge Parish Schools, was still in the future. The local board, on its own, decided to begin the process of integrating its schools by employing a teacher of the opposite race in each of its all-black or all-white schools — elementary, junior high, and senior high schools. The principal of Capitol Senior High School had been pushing for a number of years to put a program of ornamental horticulture into his school. During the summer of 1967, Federal vocational and E.S.E.A. funds became available for instituting new programs of instruction in the parish school system. A white teacher of vocational agriculture with 28 years prior experience was available and agreed to take the job of establishing the ornamental horticulture program in the school. Thus, things fell into place to make a beginning in teaching an agricultural vocation in a rather large (1600 students) city high school.

There were several important considerations which appealed to me as the first teacher of vocational ornamental horticulture in this school. First of all, the job would afford me the opportunity to concentrate on one segment or phase of agriculture rather than continue to "shoot at the side of the barn with a scatter gun" as I had done for the previous 28 years. Second, it gave me the opportunity to teach a phase of agriculture in which I had long had more than a casual interest. Also, the job was to be between and in the same city with two great State universities with a tradition of agriculture in general horticulture in particular — Louisiana State University and Southern University. Thus, I knew that most of the technical problems in horticulture which I would encounter would have a solution as near as my telephone, and within minutes. Staff members in horticulture at both institutions were most helpful during the first two or three years in our attempt to gear a program of instruction to the interests, needs, and capabilities of the high school youngsters with whom we were dealing.

From the outset our principal objective was, and is, to give sufficient basic training and experiences to youngsters to enable them to secure jobs and make beginnings in the many businesses in the Baton Rouge area related to the field of ornamental horticulture: retail nurseries, garden centers, landscape services, golf courses, city parks, retail flower shops, etc. The local administration desired the objective to be broader than this, also. They wanted all of the students of the school who had some interest in growing and caring for ornamental plants to have the opportunity to learn what they could about the subject in order that they might develop further interest in, and desire for, improving their homes and surroundings by making them more attractive by the use of ornamental plants.

It must be remembered that eight years ago the concept of teaching high school horticulture in Louisiana was mainly in the planning stage. There was no precedent nor experience to guide us in planning our course of study, providing facilities, equipment, materials, supplies, etc. The Department of Agricultural Education at Louisiana State University had formulated some materials and lesson plans which were helpful in developing our course of study, teaching plans, and providing reference materials. Also of great help were materials obtained from the Agricultural Education Departments of California Poly, Texas A & M, Auburn University and Pennsylvania State University.

A four-year course of study was formulated which provided for training in basic soil and plant science, leadership, fundamental mechanics, etc. during the first and second year; more advanced skills and techniques, such as plant pest control, fertilizing, plant propagation, greenhouse management, elementary landscape design, etc. were taught during the third and fourth years of the course.

It was the plan of the district and local school administrative staff to "hold the enrollment" for the first year for the one teacher to a maximum of 75 students. This was to compensate for the amount of time and work anticipated to be necessary for the teacher to plan and acquire the necessary facilities, equipment, materials and instructional supplies during that first year. To say that the program has been successful in terms of student interest and reception by the school administration, faculty, and patrons of the school is to put it mildly. When the time came in the spring of the first school year for students to preregister for the next term, over 300 registered for the course. The decision was made to "hold the enrollment to 300" and to employ an extra teacher. There are still two teachers employed. From 300 to 500 students have preregistered for the course each year

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since its inception, and the enrollment has been 250-300 students for the two teachers every year, including the current year.

After the third year of the program, a Cooperative Agricultural Education program was added to give some of the advanced students opportunity to gain additional experience on part-time jobs in local ornamental horticulture businesses. Also, some of the advanced students are permitted to register for Agricultural Laboratory to give them additional experiences at the school under the supervision of the two vocational agriculture teachers. Students can also earn extra credit toward graduation in this way.

The program has been generally well received by the local garden centers, nurseries, and landscape services. Similar programs are now well established in two junior high schools in the City of Baton Rouge.

It is somewhat difficult to determine the exact reasons for our success as measured in terms of student interest, job placement, and expansion to other schools within the system. I would have to place at, or near, the top of such contributing factors, the intense interest of the principal of the high school in bringing the program into his school and by his active support in its development and promotion. Also of major value has been the fact that the parish school system has been most generous in providing facilities, equipment, plant materials, other supplies, and teaching materials. At present we have a 22′ x 50′ greenhouse with automatic heating and cooling; a 40′ x 50′ shadehouse; a storage building for supplies and equipment; ample land space for flower beds, rose gardens, turf plots, etc.; media storage bins; and a cold frame. Plans are being made to add an additional greenhouse.

In terms of use of such a program to provide capable and trained employees for local horticultural businesses, it would probably not be desirable to put such a program in every senior and junior high school in the system. The City of Baton Rouge has many other kinds of off-the-farm agriculture, including several farm tractor and implement dealers, milk processing and distributing firms, poultry and meat processing plants, etc. It is my firm belief that other forms of nonfarm agriculture, with the objective of training students for jobs in some of these businesses, would prove just as popular and successful as our program in ornamental horticulture has been. Perhaps the future will see such programs in additional high schools in this city. It took a little selling on the part of school administrators and teachers at the start to convince a few skeptics that any form of agricultural training had a place in a big city high school. However, it isn't much trouble to convince people that there are myriads of agricultural jobs in a city the size of ours. Where else and how else are these workers to get their basic training for their jobs, except through educational programs in their public school system designed to train them for their jobs?

Lest it be construed by the reader that every facet of our program has been planned to be exactly the way it is by the two teachers involved and/or meets with our unqualified approval, it should be pointed out here there are some things that would be different if we had the sole responsibility of "calling the shots." First, it is our opinion that to give a teacher involved in this kind of program a teaching load of 150 students is being unrealistic. Also, it is our belief that either or both of us would be perhaps better qualified than school guidance personnel to determine which students should be permitted to take the course and which should be "guided" into other programs. At present school guidance counselors make these decisions exclusively.

In the main, however, we enjoy our work — and it has been some hard work. Also, we derive a measure of satisfaction from the fact that we have played some part in "blazing a new trail," as far as teaching an agricultural course in a Louisiana city school is concerned. The phrase we use in our orientation program for first year students, "Agriculture Comes to the City," packs a lot of meaning. ◆◆◆

(Wotowiec—from page 153)

proach not only provides an incentive for the student, but also results in a good relationship with employers. Poorly prepared students on placement result in negative public relations.

Vocational horticulture education is expensive and there will always be segments of the community who feel that the costs are too high. In Cleveland every attempt is made to coordinate the program so as to capitalize on all available resources. As an example, the foliage plants produced as part of the Vocational Horticulture operation are used in the elementary school "Garden Science" and "Home Garden" programs. Vegetable plants used in the "Tract Garden" program are for the most part grown by vocational horticulture students. Under close supervision, students operate end loaders, a bulldozer, backhoe and other equipment on school related jobs. The majority of the floral work required for events such as graduations, special meetings, and assemblies is done by vocational horticulture students. When these benefits result as a part of a valid vocational horticulture program, they not only save money but also provide a valuable, positive public image.

Horticulture is an industry with many facets and provides job opportunities for people with different ability levels. Limited ability and physically handicapped people can find productive, self-satisfying horticultural jobs and in the Cleveland program; effort is extended to provide them with appropriate knowledge and skills. One or two such students are usually in every class and usually do not adversely affect the progress of the other students. On the contrary, such situations provide opportunity for human relations skills development by all involved.

A separate class of limited ability vocational horticulture students has been in operation for two years and is considered highly successful. These students must also meet industry minimum standards for employability, but for selected jobs which fall within their capability range.

Students with high capabilities are given encouragement and guidance to view their vocational goals from a realistic perspective. If that goal requires post-high school preparation, they are assisted in planning toward that end.

Vocational Horticulture in Cleveland has undergone significant change in the last 13 years and undoubtedly will change more in years to come. The lines of communication between the industry and schools remain open and the challenge of the future is welcome. ◆◆◆

Horticulture and the FFA

Clifford L. Nelson
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FFA's strength has been its problem in urban and suburban areas. The ability of the traditional FFA to relate to the needs of rural areas and to train youths for these needs has given the FFA a strong rural image. If the FFA had not been so successful, the problem of non-membership in horticulture programs would not be as great as it is today.

In many cases the suburban horticulture student could be called the "New Disadvantaged" in vocational education in agriculture if they do not have the FFA experience. Other vocational programs have long been very strong on teaching specific job skills. Yet these other vocational programs have realized, as early did the founders of the FFA, that something other than specific skills were needed to prepare youth for success in the world of work. The recent strong growth of VICA, DECA and other vocational youth organizations has indicated the concern of their leaders and the vocational teachers.

The leadership and interpersonal skills taught in the FFA and the other vocational youth clubs is an essential part of helping ensure job success. Many studies have shown that people most often lose their jobs because of personality and attitude problems rather than lack of skill to carry out a job.

Horticulture students deserve the same break as the other students in the vocational education in agriculture classes. They deserve a chance to participate in the FFA. Many teachers will say, "I did give them a chance but they were not interested." Perhaps they were not interested in the FFA program as it was presented. Perhaps the biggest mistake is suggesting that horticulture and other special interest students should "buy-in" on the total FFA program. Some of the current FFA programs, state and national, do not have a close relationship to horticulture. However many programs and activities do have opportunities for the horticulture student. The following are some suggestions for horticulture FFA chapters:

Give These a Try:

1. Organize the chapter a different way. The National FFA Constitution now allows more than one FFA Chapter per school.
   a. Consider one overall chapter for your horticulture program with each class period being a subchapter.
   b. Elect officers for each class period so more students can have leadership experience.
   c. Consider organizing a chapter for each class period or for each grade in the school.
   d. Hold one meeting per month during one class period for each class. If you have only one chapter per school, have the officers of each class meet monthly to conduct the business of the overall chapter. It is impractical to have mass meetings of all horticulture students during the school day or at night in most schools.
2. Select proficiency awards suitable for students with horticulture interests.
   a. Proficiency Awards closely related to all horticulture programs are Ornamental Horticulture Placement in Sales and/or Service and Home Improvement. These should be possible in any horticulture program.
   b. Proficiency awards that are possibilities in many schools for horticulture students are Placement in Processing, Agricultural Mechanics and Agricultural Electrification.
   c. Occasional students in horticulture would also have opportunity to develop Proficiency Award programs in Outdoor Recreation, Soil and Water Management, Fish and Wildlife Management, Placement in Agricultural Production, and Forest Management.

   Therefore all but the Traditional Proficiency awards in Crop, Dairy, Poultry and Livestock production might be suitable for horticulture students.
3. Select leadership activities suitable for horticulture students.
   a. Public Speaking and Parliamentary Procedure contests are excellent for all horticulture students.
   b. A state FFA Knowledge Quiz Contest should be of interest to horticulture students.
   c. The leadership training sessions held in state FFA regions, on a statewide basis and on the national regional level would all aid horticulture students.
4. Select state-wide contests suitable for horticulture students.
   a. All horticulture programs should compete in the state Ornamental Horticulture and Vegetable Judging Contests.
   b. Many horticulture students would be capable of competing in the land judging and tractor driving contests. An occasional student may also have the interests and skills to compete in the agricultural mechanics contest.
5. Participate in National Contests that would have relevance to the horticulture student.
   a. Every horticulture chapter should compete in the National Chapter Award Program. This includes preparing a program of work and budget to submit to the state. No well run organization can effectively operate without these.
   b. The Building Our American Communities program fits in with many of the current horticultural program activities in the state which have included landscaping and beautification of public and private areas. BOAC is a program that could be very interesting and rewarding to horticultural FFA chapters.

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AGRICULTURE-HORTICULTURE PROGRAMS IN VIRGINIA BEACH

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Virginia Beach Vocational
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Elgia Easter

Many more people than one would suspect still think Vocational Agriculture is only a rural school program. Prominent among those who think so are administrators, teachers, guidance counselors, and students in urban schools not having such programs. More urban people are learning first hand at their own school that Vocational Agriculture, with all its associated option programs, is working with the basics of our existence — a way to a better life through better understanding and management of all our resources.

While it is true that urban vocational agricultural programs do not enjoy the broad spectrum of support that they do in the rural areas, they are an important offering in the urban school curriculum, and their varied instructional areas offer much to the student. There are differences in urban and rural programs which can readily be pointed out, but there are also many similarities.

In the Virginia Beach, Virginia city schools, the vocational agricultural program is centralized in one school, The Virginia Beach Vocational-Technical Educational Center. This school, which offers only vocational and technical courses, supplements the existing curricula in the six secondary schools of the city. Students are bused to the Center from their home school for a three-hour class each morning. The required subject matter is obtained at the home school during the remainder of the day. The vocational agriculture program for the Virginia Beach City Schools consists of the general vocational agriculture shop and ornamental horticulture.

The gasoline powered edger is just as easily managed by young ladies as by young men is proven by horticulture student, Debbie Barnish, above.

Virginia Beach is a rather unique city in that there are major farming areas within this city of approximately 200,000 people. Agriculture, with all of its related businesses, ranks with the tourist industry as the major source of income in the city. The major agricultural incomes are derived from dairy and swine, truck farming, agronomic crops, and horticulture. Within the last few years, there has been a tremendous upsurge of horticulturally related businesses appearing in the city. This, coupled with the constantly increasing urbanization of the area, has made horticultural opportunities more numerous and inviting.

Students in the horticulture and agriculture classes offered by the Virginia Beach Vocational-Technical Educational Center are afforded numerous, varied opportunities to perform their expected curriculum tasks while at the same time developing expertise, confidence, ability, and responsibility in their role as a student and as a fellow horticulture-agriculture worker.

One of the main differences in rural and urban programs, however, is the opportunity for the teacher to work with the student in his out-of-school projects. Further, since many students come from homes with no acreage, the student has little opportunity to participate in certain activities that are considered a normal, everyday part of a rural vo-ag program.

The urban program focuses on the needs of the local area, just as the rural program does. But the needs are different, and thus, there are dif-

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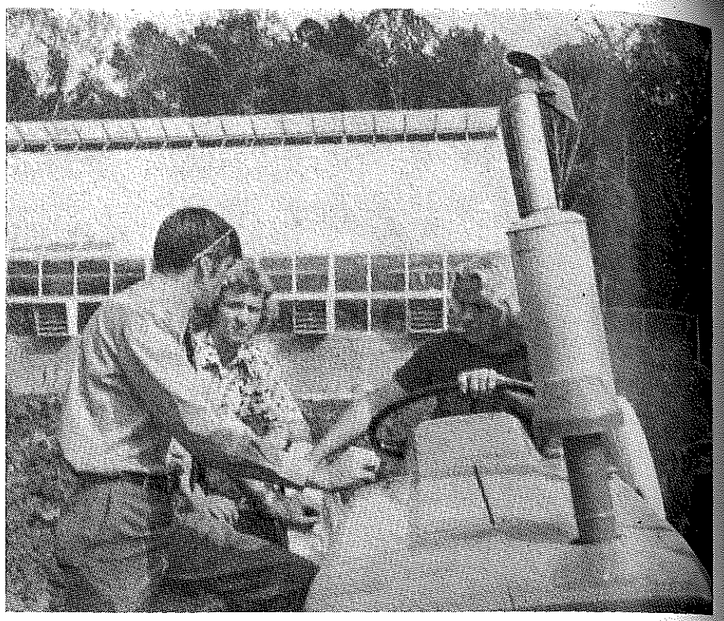
ferences in the operational management of the two programs. The basics of agriculture and horticulture, however, and the basics of the vocational agriculture-horticulture curriculum remain very much intact and very similar to those in other areas.

The vocational agriculture program offers the student broad experience in swine, dairy, truck and agronomic farming and vegetable growing for the city grower, as well as general shop skills. The ornamental horticulture option offers the student the opportunities to gain occupationally oriented experiences in florist, nursery, and garden center operations, greenhouse production of ornamentals, landscape design, planting, and maintenance, as well as the safe and efficient operation of equipment used in the horticulture industry.

The key to a successful urban program seems to be:

(1) *Student interest.* If the student comes to the horticulture or vocational agriculture class already enthused and with his interest already showing, then the job of the teacher is easier. In this case, he only has to promote and stimulate. However, if the student comes to the class with no great interest already developed, the teacher must use his own ingenuity and enthusiasm to inspire the student. The author has found that the student responds and develops most often as he has been influenced by the teacher. If the teacher lacks enthusiasm, then it is quite difficult to develop any enthusiasm by the student for the program in which the student is enrolled.



Horticulture students, Cliff Libbey and Bill Jones, receive instruction from Horticulture Instructor, Elgia L. Easter, in the operation and handling of a tractor. In the background is the modern greenhouse at the Virginia Beach Vo-Tech Center.

(2) *Teacher attitudes.* Students seem to attach importance to those values and attributes to which the teacher attaches importance. Teachers with strong, positive, healthy attitudes are more likely to have students with like attitudes.

(3) *Administrative backing.* The support and cooperation of the school administration is essential for a strong program. Without this, the program will only flounder.

(4) *Public support.* The public needs to be able to identify with the program needs. In Virginia Beach strong emphasis is placed on this, just as with the other areas. Much can be done, as any vocational education instructor will attest to, with home contacts and adult programs.

Thus, the Virginia Beach, Virginia city schools has a strong urban horticulture and vocational agriculture program which is geared to serving the needs and interests of a major diversified metropolitan area. Vocational agriculture in this area of the State must be uniquely diversified. Those involved with the program feel that it is

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c. National FFA Safety Award Program is designed to assist in safety training for members and their communities. Horticultural programs use many pieces of equipment and materials that require safety training. Home safety, safe use of electricity and pesticides are important components of a horticulture program. The safety contest rewards chapters that emphasize safety education.

d. The National Calendar Program, International FFA Programs and National FFA Week are some of the other national activities that horticulture students should have opportunity to take part in.

Summary:

There is not much in the FFA today that would not be relevant and important to horticulture students of vocational education in agriculture. Teachers who do not give their students a chance to participate are "short-changing" their students. Horticulture teachers, like general vo-ag teachers of the past, will have to develop special competitions and activities for their students. Innovative programs such as the "Horticultural Happening" held for the FFA region at North Harford High School during the fall of 1973 will have to multiply. Meetings only among horticultural students will have to be encouraged along with special educational programs and field days. Horticultural programs should "buy-in" to the parts of FFA that they find interesting. FFA has always helped to improve the quality of learning for general vo-ag students. It will do the same for horticulture students. ◆◆◆

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Include Adult Education in the Annual Program

J. C. Atherton
Teacher Education, Louisiana

J. C. Atherton

World events in recent months have had a tremendous impact upon American society, and indeed, upon the entire universe. Who would have thought that almost overnight the Middle East would become the center of world capital, or that oleomargarine would be as expensive as butter, or that sugar prices would have increased astronomically, or that there would be a threat of a shortage of some foods in the American supermarkets? Yet, all these things and more have come to pass in a relatively short period of time.

Events have pushed agriculture to the forefront in the American economic picture. It is difficult to overestimate the value of the fruits of the farm to the national way of life. It seems that balance of payments for overseas goods depends to a large extent upon farm products. The continued increase in our own population calls for an ever increasing amount of food and fiber. Overseas demands upon the food storehouse of the United States are also adding pressure for more agricultural goods. It seems that never before in a period of peace has agriculture seen anything like the present opportunity. However, it may be worthwhile to consider the sage advice of Hambone who opined, "Most people don't get nowhere because they don't have nowhere to go when they get started."

It is imperative that we look back in order that we may more clearly look ahead. One must project what he would like to accomplish in the months ahead. The teacher who has been assigned the role of leader in the community has both a responsibility and an opportunity. The major task facing him is that of taking hold and making the most of it.

In the conduct of a comprehensive program of education in agriculture, work with adults of all ages should occupy a place of significance. This fact is even more obvious during this period of shortages, uncertainty and continuing inflation. The late Dr. Hamlin expounded the thesis that adults need education as much in periods of prosperity as they do in times of adversity. Currently we are in a mixture of such times — some elements of prosperity and definitely some adversity.

In the field of agriculture, adults are significant. Their role in the American economy is such that it is wise to expend time and energy in their behalf. It seems that the educator must be concerned about this segment of our population even though they may not evidence much interest in adult education.

Many problems relating to the various aspects of agriculture need attention now. What is done about them is a matter primarily in the hands of the adult who is currently on the "firing line." He is the one who will determine the destiny of agriculture and to a marked degree of our nation too. The confusion and disarray of our times will be decided or alleviated one way or another, by the adults. In fact, the very survival of our way of life is in their hands.

One should hasten to say that youth are important and their education and guidance should not be curtailed as future generations depend upon it. This aspect of the agricultural education program historically has received the lion's share of attention, and for many the entire effort has been expended upon youth.

The central theme of this discourse is that a viable far-reaching program of education in agriculture should include adults. This phase should be conducted in an organized way and on a systematic basis. Agriculture cannot survive and prosper without adults. The financing, leadership, and basic responsibilities for this phase of the American economy are primarily shouldered not by youth, but by the adults. There is lots of truth in the conclusion that "Youth are the hope of tomorrow; but adults are the only hope for today."

Lots of excuses have been set forth as to why one's efforts have been expended on teaching the in-school group and why those no longer enrolled as full-time students have been neglected. Each of these reasons, no doubt, has an element of truth in it. Frequently the reason of greatest significance is overlooked and not uttered . . . it is easier to work with the all-day students, a captive audience, than it is to enlist and work with adults. In essence, many would rather take the easy way out and leave the out-of-school instruction to others. Using a modern expression, one could say with justification that in agriculture the adults are the "now generation." To fail to include them in the overall plan for instruction would be to doom the program to a second rate level. An important segment would be overlooked and ignored.

The framers of our basic vocational education act, The Smith-Hughes Act of 1917, recognized the need for training adults in agriculture. Section 10 states in part: "that such education shall be of less than college grade and be designated to meet the needs of persons over fourteen years of age who have entered upon or who are preparing to enter upon the work of the farm or the farm home." Note that the implication here is that first emphasis be given to those now engaged in agriculture. When subsequent Acts broadened the support and the types of training given, none have even implied that adult education was not important.

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TEACHING AGRICULTURAL OUTDOOR PROGRAMS IN AN URBAN SETTING

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Charles Tillman

Teachers of vocational agriculture need to promote outdoor agricultural programs by using the outdoors as a teaching aid for adult classes, young farmer classes, and day classes. With these classes, a good foundation can be laid on which to build and provide each community the opportunity to participate in setting up its own outdoor area.

Interest in using outdoor areas for recreational purposes is increasing. Changes in patterns of work are resulting from shorter workweeks, earlier retirement, and longer life spans. These changes are bringing about increased leisure time for many people. How leisure time is used can contribute substantially to the quality of life of an individual. Leisure activities conducted in appropriate settings can make substantial contributions to personal satisfaction and result in renewed energy to cope with the routines of a technical society. Agricultural education can make a substantial contribution to quality of the facilities and activities available for outdoor recreation.[1]

Agricultural activities in the outdoors can be rewarding for the aged as well as for the young. Teachers should use the FFA Chapter as a training agent for setting up joint activities that will involve all the groups in the community —teenagers, couples with children, older people, and others.

Teenage boys want to participate in activities that will impress teenage girls. Teenage girls want to be near where there are teenage boys. Mothers and fathers want safety for their children to play, and they receive pleasure from watching their children enjoy various activities. Older people may prefer to relax in a quiet place, fish, take nature walks, bird watch, or just simply enjoy the beauty nature has created.

Learning is enhanced in an outdoor setting. Students become directly involved with nature or natural resources and learn through observation, association and participation about the value of our natural resources. Concepts are best taught where involvement takes place. However, teaching outdoors cannot replace classroom instruction, but it enriches the learning and better prepares the students for making good decisions regarding outdoor activities. The effective utilization of the natural resources as a teaching aid will help promote the educational growth of the student.

Outdoor activities worked for me as a teacher of outdoor classes at the Deep River Outdoor Education Center in Gary, Indiana. Specifically, I taught the soils portion of the curriculum in the nature center by relating the communication skills to an outdoor laboratory setting through the following.

A. Pre-post test for soil problems
B. Vocabulary Building—Definition of Words
   1. Soil
   2. Weathering
   3. Leaching
   4. Capillary action
   5. Hardspan
   6. Profile
   7. Classification
   8. Indentification
C. Problem Solving
   1. Does the depth of soil vary from area to area?
   2. Does the rate of water intake determine the amount that runs off?
   3. Is the (physical) formation of ice one of the physical processes that weathers rock?
   4. Is the variation in temperature one of the physical processes that weathers rock?
   5. Does loamy soil contain a detachable amount of humus?
   6. Are there many kinds of dormant plant life existing in the soil?
D. Recording trail observations
   1. Texture of soil
   2. Color
   3. Soil profile
   4. Size of soil particles
   5. Organic matter
E. Identification and study sheet of soil
F. Observation of soil and water erosion

Objectives for Outdoor Laboratory Phase

The objectives for the outdoor laboratory phase of the course follow:

1. To provide the student(s) the opportunity to participate in outdoor activities in their natural setting and relate the outdoor experiences to their classroom learning experiences
2. To provide motivation to classroom learning
3. To provide the student(s) the opportunity to develop an interest and appreciation for outdoor life
4. To enhance the existing instructional program

Soil is an important part of our natural resources and must be used wisely to sustain plant and animal life for generations to come.

Student Learning Activities

The following soil activities were selected to inform students concerning what could be done in an urban, outdoor setting.

A. In the classroom
   1. Look at filmstrips, movies, slides, etc. on soils.
   2. Look up words concerning soils in the dictionary.

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[1]Dr. Jasper S. Lee, Agricultural Education Department, Virginia Polytechnic Institute and State University, Blacksburg, Virginia

Integrating Community Development With Innovative Teaching

George E. Emmerich
Teacher of Agriculture
Brussels, Wisconsin


George Emmerich

Are you absolutely sure that what you teach and how you teach it is, or will be, of value to the student? Based on past experiences, I am sure that every person who has mastered the three basic skills of reading, writing, and arithmetic can survive in our society. The degree of the accomplishments of the individual is usually based upon his further mastery of the three basic skills. The extent of mastery of the reading, writing, and arithmetic is often influenced by the student's environment.

At this point in the student's education, we must ask ourselves whether form follows function, or does function follow form? By this I mean, should the function of our teaching follow the form of the community or should the function of the community follow the form of the teaching?

Let us now refer to the first part of the question, "Should the function of our teaching follow the form of the community?" I answer this with a *yes* based on the following assumption: We cannot teach someone something we do not ourselves know. In most cases, most of our knowledge has come to us from a *community*. I use the word community in its broadest sense. It can be the area in which we live, the home, the church, a university, or the world.

There are several ways that we can provide this community knowledge to the student. We can wait until this knowledge is accumulated on filmstrips, movies, in textbooks, etc., or we can go out into the community to observe and participate in this knowledge. I believe that when possible the latter will provide the student with the most valid experiences. I also must admit that it would be impossible for the student to receive all of his education in this manner. Human life is too short for this; we must use the experiences of others too.

> *I have found that noon luncheon meetings are very successful for advisory council meetings.*

The question now arises. How can we get our students involved in this community knowledge? First and foremost, the school board and school administrator must feel that the unity of the school and the community is germaine. If this is not the philosophy, the chance of integrating community development with the school will be nil.

Let us assume that the school philosophy is favorable. How then do we get the community involved with the students? I have found that the best place to start is with a course advisory council.

If your classes are similar to the average high school class, with some students who are degree bound, some vocational skills bound, and with some who will immediately enter the job market, then you will have to have a diverse council to meet and provide the needs of the students. I would like to caution you at this point that most teachers, being educationally oriented, have a tendency to overload with degree people. This in many cases will not provide you with the type of council needed for your students.

How should you conduct an advisory council meeting? The initial commitment of members of an advisory council is done by verbal agreement with the instructor. Prior to the first advisory council meeting, you should mail or deliver a guide to the members. The mailing should contain the names of each member, his occupation, and the broad goals of the course, along with the usual meeting place, time, etc. Ask each member to bring forth his ideas about how these goals might best be attained. Remember, the purpose of the advisory council is to assist you in providing community knowledge to the students. Specific objectives and methods of attaining these objectives should be formulated through the joint efforts of the instructor and the council, not by the instructor alone.

Occasionally a member of the council will bring forth an idea that you may think is not workable. If at all feasible, try it; these people know more about their fields of work than you do, and their suggestions may be more practicable than they sound.

I will not elaborate on specific objectives because the objectives will vary from community to community. I will say this, however; an interested and enthusiastic advisory council will get your students into the community and will assist in bringing the community to the school.

Where should advisory council meetings be held? I believe that the meetings should be held at the school, thus giving the members of the council an opportunity to see the facilities available to the students and instructor.

When should the meetings be held? The members of an advisory council are usually very active in other community affairs which often require evening meetings. To avoid the additional burden of another evening meeting. I have found that noon luncheon meetings are very successful. The members are invited as guests of the school to participate in the hot lunch served in the cafeteria. The members eat lunch in the meeting room which allows time for informal discussions prior to the start of the meeting. This pro-

(Concluded on page 163)

Agriculture in Elementary School: A Challenge

John R. Crunkilton
Teacher Educator
Virginia Polytechnic Institute and State University

J. R. Crunkilton

If we accept the premise that agricultural education should be taught in the elementary school as it was argued in the January 1973 issue of the *Ag Ed Magazine,* then careful thought must be given to the manner in which the agricultural topics should be included within the curriculum. Realizing that no single approach may prove to be a panacea for all local educational programs, several concepts have been explored for consideration for the offering of agricultural instruction at the elementary level.

One possibility is a full-time agricultural teacher hired specifically for the elementary grades. This particular approach would permit an agriculture teacher to plan and to implement an innovative and comprehensive education program of agriculture in the elementary grades. This particular teacher could rotate from grade to grade throughout the year, teaching topics relating to agriculture. A full-time teacher could also conduct field trips for individual classes, supplement classroom instruction in the form of team teaching, and assist guidance personnel and those responsible for career education instruction by providing up-to-date information.

Theoretically and ideally, the concept of hiring a full-time teacher has many merits. But realistically, as long as a shortage of agriculture teachers exists and local finances are limited, the feasibility of this approach does not appear practical. This implies that more practical approaches must be considered if teaching agriculture in elementary grades is to become a reality.

A major thrust could be launched by the extensive development of materials, lesson guides, and teaching aids which elementary teachers could use in their instructional programs. This approach would permit the elementary teachers to plan and to carry out most of the instructional activities and the local agriculture teachers could serve as consultants to assist and to guide the elementary teachers when appropriate. To help delineate how this approach could be successfully implemented, several elements have been singled out for detailed discussion.

Curriculum guides — An effort to develop a well detailed curriculum guide to assist elementary teachers in planning agricultural instructional topics would provide valuable direction. This proposed curriculum guide should include all specialty areas of agriculture and also serve to give direction for the instruction of careers available in agriculture.

Lesson materials — These lesson materials should be based upon the proposed units of instruction identified in the curriculum guides. The format of the materials would encompass the objectives, introductory approach, key questions to ask the students, technical information, study questions, student projects (both individual and group), resources and references available for the teacher and students, and application or follow-up examples. These lesson materials must be explicit and concise in order that teachers who are unfamiliar with agriculture could review the materials and prepare themselves for teaching these agricultural topics.

Teaching Aids — The development of teaching aids relating to the agricultural topics to be taught at the elementary level could help tremendously toward an effective teaching-learning situation in the elementary grades. Filmstrips, slide sets with a script or narrated on tape, films, transparencies, and other aids that supplement the instruction on agricultural topics would tend to encourage teachers to teach agricultural topics.

Textbook — Another approach would be the development of a textbook for use by the elementary teachers and the students. In 1913, a textbook was written for 6th, 7th, and 8th graders to help acquaint students with farming and agriculture. This book, *Sixty Lessons in Agriculture,* could very well provide us with ideas on the preparation of a book today for the teaching of agriculture in the elementary grades.

Mini-projects or experiments — The use of well developed mini-projects or experiments relating to agricultural topics could serve as an approach by which students could learn about agriculture, ecology, and careers. For example, a mini-project describing the steps a student should follow in planting a seed in his own container and caring for the growing plant would help an individual learn some of the basic principles of growing plants. This special project could also lead into different aspects of food production and processing. Mini-projects could also be developed in the areas of conservation, animals, and many other topics and could take place in the classroom or outside the walls of the classroom.

The outline of the mini-project would be as follows: topic; objectives; materials needed; steps to follow or procedures; and a summary statement. An example of an experiment was contained in "Stories in Pictures" in the October 1974 *Ag. Ed. Magazine.*

School farm, laboratories, greenhouse and the agricultural classroom — These facilities could be used very well for supplementing classroom instruction. Hosting field trips to these areas or other locations in the community would help students visualize

(Concluded on next page)

(Crunkilton—from page 162)

the topics under discussion and develop a concept of the world of work in their own community.

Resource people — Involving guest speakers or resource people in the classroom setting would help to vary teaching techniques and again the teacher could very effectively cover the occupations in the community. In addition, technical information in the agricultural specialities could be included as part of the instruction when a resource person appears. For example, a local florist could be invited into the classroom to discuss species of flowers and their uses.

As career education becomes a greater part of the elementary programs and becomes an established part of all local educational systems, agricultural educators have no choice but to give leadership to the development of the type of agricultural education program which will lead to a meaningful learning experience for all students. Otherwise, no agricultural awareness will exist or at the very best only a futile attempt will be made by those who do not have the necessary expertise. ◆◆◆

REFERENCES

Buffum, Burt C. and David G. Deaver, *Sixty Lessons in Agriculture,* American Book Company, 1913.
"Stories in Pictures," The Agricultural Education Magazine, Vol. 47, No. 4, October 1974.
The Agricultural Education Magazine, Vol. 45, No. 7, January 1973.

(Tillman—from page 160)

3. Discuss soil problems and concepts in groups. Tape replay for more discussion.

B. On the site
1. Take soil samples from several areas.
2. Observe soil horizons on site.
3. Discuss soil and water erosion, including ways to control and prevent it.
4. Demonstrate and discuss how soil is made from rocks.
5. Study soil particles.
6. Discuss the capillary movement of water in the soil.
7. Discuss how humus improves the soil.
8. Discuss the importance of minerals and moisture in the soil for plants.
9. Test pH of soil samples.
10. Compare soil samples as to moisture content.

Along with the above outdoor activities, teach the students how to convert eroded waterways into lakes, ponds, or small swimming areas. Teach the students how to develop run-down farms into golf courses, nature trails, a bird sanctuary, campground, or even an animal farm.

Suggestions

Suggested learning activities are:
1. Building picnic tables with interested carpentry students;
2. Selecting an area for outdoor project activities in the community;
3. Landscaping the area selected for recreation with interested students; and
4. Having each class—adult, young farmer, day classes—be responsible for completing a part in each recreational area.

Outdoor activities should *not* be performed 1) when students don't know what they are trying to accomplish, 2) as a means of just getting out of the classroom, 3) as a penalty for improper behavior, 4) when teaching materials are poorly prepared, and 5) when the activities are not approved by the school administrator.

In conclusion, teaching in the outdoors provides students the opportunity to correlate what they learn in the classroom about nature/natural resources, and hopefully develops an appreciation for our natural resources. Remember, most people simply enjoy being outdoors. If we do not promote our agricultural programs, someone else will. ◆◆

(Emmerich—from page 161)

cedure also provides an opportunity for the members to observe the school community in progress.

Regardless of where and when the advisory council meetings are held, be sure that the starting and adjourning times are on the agenda sent out and then adhere strictly to the times stated.

Let us now assume that our goals and objectives are feasible and that they are agreeable to you, to the advisory council, to the students, and to the administration. The program is off the ground. You are involved in the community's development. Students are involved in supervised work-experience situations and in other community activities. Resource personnel from the community are coming to the school and everything is going great. The continual success of the program is up to you. You have to become totally involved. Constant communication and information must be given to the advisory council, the students, and the administration. This is a crucial area where we have a tendency to procrastinate. People who become involved in this type of program want to be informed of its progress or they will lose interest and stop contributing.

IN SUMMARY

To integrate community development with innovative teaching the instructor has to have the support of a school system that believes that the school and community are inseparable. If this is the philosophy of the school, the instructor can proceed by first forming an advisory council based on the needs of the students in the course. The objectives and goals should be developed through the joint effort of the council and the instructor. If the objectives and goals are feasible and agreeable to the council, instructor, students, and administration, the program can be considered on its way. An interested and enthusiastic advisory council will provide ideas and suggestions whereby the students may have supervised work experience programs in the community and resource personnel at the school.

Communication and information must be disseminated to the council, administration, and students by the instructor. Lack of good communication will almost certainly cause the program to fail. ◆◆◆

ENVIRONMENTAL FACTORS INFLUENCE INSTRUCTION

Dr. Winfrey Clark
Extension Specialist
Virginia State College
Petersburg, Virginia

and

Dr. Forrest Bear
Teacher Education
University of Minnesota
St. Paul, Minnesota

"I can't hear" is frequently screamed when the teacher and student try to achieve verbal communication. Is it true that the student can't hear or is he using that as an excuse? Other forms of communication, such as pointing, touching, and reading are frequently utilized to increase the total communication process.

Noise levels experienced in the instructional environment of shops prompted Winfrey S. Clarke to conduct a research topic on the radial arm saw for his dissertation at the University of Minnesota.[1]

Clarke selected the radial arm saw because it is a frequently used power tool in both the agricultural and industrial education shops.

The environmental factors of noise, temperature, and visibility greatly influence our instructional programs. These factors are a part of each instructional program and lesson whether it is recognized or not. The perfectly planned classroom or agricultural mechanics shop lesson can be a disaster if the student can't *hear,* can't *see* and the temperature is a distraction.

Architects and engineers have addressed themselves to the temperature and lighting problems in our school buildings but frequently NOISE problems are ignored. Saying the problem is being ignored may be an erroneous statement because of the present Occupational Safety Health Act (OSHA) emphasis on noise in our environment. Too frequently the teacher is told, "It has always been that way," or "You've got to live with the situation."

The test saw used in this study was a Delta Rockwell, 12-inch to 14-inch radial arm saw with an 8 horsepower, 3,450 RPM motor. The Bruel and Kjaer sound level meter (type 2204 with type 1613 octave band filter) was used to take sound pressure level readings and center frequency readings at four positions around the radial arm saw. See Figure 1. The different types of saw blades that were used in this study included a 14-, 12-, and 10-inch combination blade, a 14-inch rip blade, and a 12-inch crosscut blade. Initial readings of the 14-inch combination blade can be observed in Table 1.

TABLE 1
Initial Readings Data
14-inch Combination Blade

Measuring Point	Sound Level dBA Sound	Response
P_1	92	104
P_2	91	102
P_3	91	97
P_4	90	99

The major contributors of the noise generated by the radial arm saw were found to be:

1. Overall diameter of the saw blade, number of teeth per blade, and the condition of the blade.
2. Impact of the blade on the wood surface.
3. Possible aerodynamic disturbance resulting from cutting tooth configuration.

The 12-inch crosscut saw blade along with the 14-inch combination saw blade generated more noise at the four measuring positions than the other blades tested, and the 10-inch combination blade generated the least amount of noise. The major octave band frequency of the radial arm saw noise was found to be at the center frequency of 4000 H_z, see Figure 2.

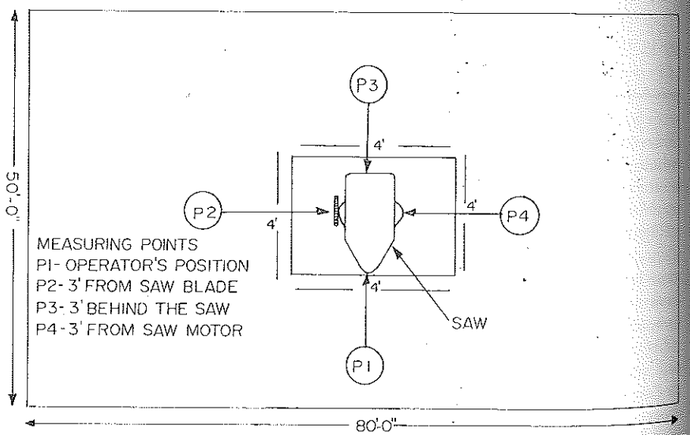


Fig. 1. PLAN LAYOUT OF RADIAL ARM SAW SHOWING MEASUREMENT LOCATION

NOTICE

The Business Manager's address has been changed to: Harlan E. Ridenour, Business Manager, Agricultural Education Magazine, Box 14343, Columbus, Ohio 43214.

1. Clarke, Winfrey S., Analysis and Control of Noise Generated by the Radial Arm Saw and its Relationship to Communication Between Student and Teacher. Unpublished Ph.D. thesis, Library, University of Minnesota, Minneapolis, Minnesota. 1974.

In an attempt to reduce the noise in and around the saw, three techniques were tested: (a) enlarged washers with a foam rubber backing; (b) slotted saw blades; and (c) a partial enclosure with accoustical tile to control the noise in the transmission paths between the source and the received. After applying the above techniques, noise levels at the operator's position were still quite high, 90 dBA and above; therefore, earplugs or earmuffs are recommended when operating the radial arm saw.

Barton's "BASIC LANGUAGE" computer program was used as an instrument to evaluate the attenuation that would be afforded by twelve different types of earplugs and earmuffs at the nine center frequency from 31.5 to 8000 H_z for noise generated by the radial arm saw. The attenuation that was afforded by these twelve devices varied with the noise spectra. For example, a comparison was made with the radial arm saw noise which has its noise components predominantly in the high center frequency region, above 1000 hertz, and the wood planer noise which has its noise components predominantly in the low center frequency region, 500 hertz and below. The effective noise reduction in dBA from earmuff E, (an over-the-head type with a foam rubber cushion which allows for a seal between the muffs and head) was about 2 dBA higher than for earmuff B (an over-the-head type of headband with a double-fold plastic cushion providing the sealing around the ear) when used to treat the wood planer noise. However, earmuffs B provided about 3 dBA great effective noise reduction than earmuff E for the radial arm saw noise. The reason for this was that earmuff E provided better attenuation than earmuff B at the lower frequencies which dominate the wood planer noise, and earmuff B provided better attenuation than earmuff E at the higher frequencies, which dominate the radial arm saw noise. Therefore, in selecting earplugs or earmuffs for effective noise reduction, consideration should be given to the frequency distribution of the noise and the wearability of the earplug or earmuff.

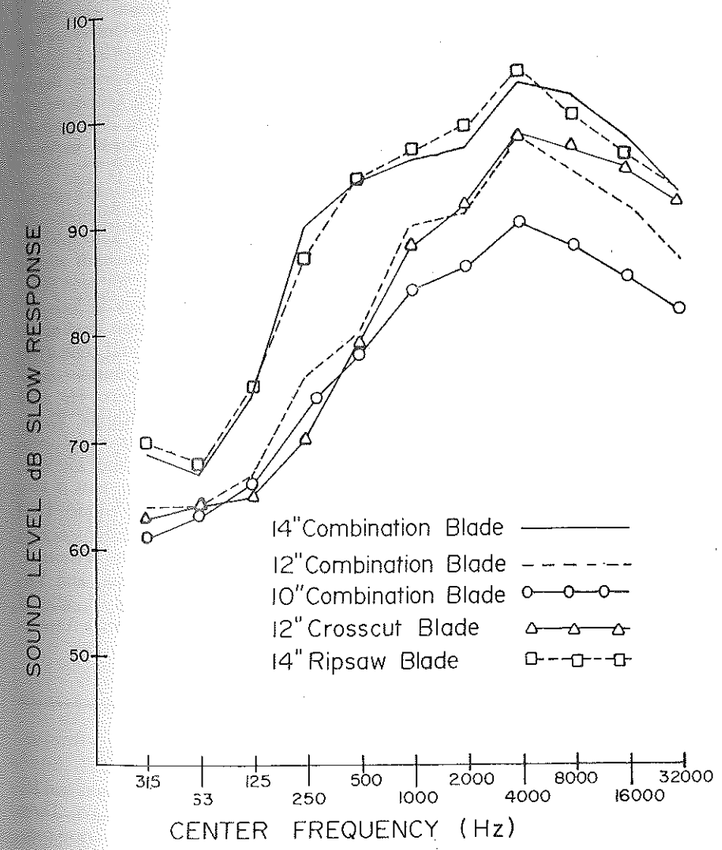


Fig. 2.
DISTRIBUTION RANGE OF SOUND ENERGY AT CENTER FREQUENCY FOR SAW BLADES USED IN STUDY MEASURED AT POINT 1

In an attempt to measure the effects of radial arm saw noise on verbal communication, the Harvard University Psych-Acounstic Laboratory Phonetically Balanced (PAL-PB) standardized word lists, numbers seven and eight were administered to 22 individuals who were enrolled in Agricultural Shop-Metalwork during the fall quarter of 1973 at the University of Minnesota, St. Paul. The word lists were administered with the noise levels at 90, 85, 75 and 70 dBA and the speech level kept constant at 70 dBA. Students understanding of speech was greatly influenced by varied degrees of noise. For example, when the noise level was at 90 dBA and speech level was at 70 dBA, the mean score for correct responses for the 22 test individuals was 18.7 out of a possible 100 words. But as noise levels were decreased to be more in line with the speech level, the mean scores for the test individuals increased accordingly. For instance, when the noise levels were at 85, 75, and 70 dBA, with the speech kept constant at 70 dBA, the mean scores were 45.5, 85.7, and 95.5, respectively.

The students were correct. They can't hear with the radial arm saw operating. The saw produced a noise level which not only restricted verbal communication but if the student and/or teacher is subjected to the noise level for prolonged periods of time it can be injurious to their hearing.

(Concluded on page 167)

New Special Editors

(See others on page 148)

Special Editor for Colorado, Arizona and New Mexico

Irving Cross

Dr. Irving Cross, Professor and Head of Agricultural Education at Colorado State University, graduated from high school at the beginning of World War II. He returned from the Marines at the end of the War to get a B.S. degree at Colorado State University and teach three years of vocational agriculture at Sterling, Colorado before going with the Marines again during the Korean War. He was vocational agriculture teacher again at Sterling for a year and was Coordinator of Vocational Education for three years before going back to Colorado State as a full-time graduate student. After the Masters degree, it was back to his old job at Sterling for one year before he became a teacher educator at Colorado State. Except for some time to work on the Ph.D. at Ohio State and a year as Acting Head of Vocational Education, Irving has been a teacher educator in agriculture at Colorado State University since 1957.

We welcome Irv as a special editor of the *Magazine*.

Special Editor for New York and New England States

Arthur Berkey

Dr. Arthur L. Berkey is an Associate Professor of Agricultural and Occupational Education at the College of Agriculture and Life Sciences at Cornell University, Ithaca, New York. He joined the Cornell Agricultural Education staff in 1967 upon completion of a Ph.D. at Michigan State University, East Lansing. Arthur is married and has one son aged four years.

His professional affiliations include life membership in AVA and NVATA, and membership in AATEA, Phi Delta Kappa, and Association of Teacher Educators.

Special Editor for Texas and Oklahoma

Herbert Schumann

Herbert Schumann, an assistant professor in the Department of Vocational Education at Sam Houston State University, works with student teachers and in graduate education.

Schumann received the B.S. degree in Agricultural Education from Texas A & M University in 1960. The Master's degree in administrative education came from the University of Houston. He completed the Ph.D. at Texas A & M in 1972 and served as Assistant Professor in the Agricultural Education Department. The title of his doctoral dissertation was, "Conceptual Variations Concerning the Role of the Teacher of Vocational Agriculture as Perceived by Vocational Agriculture Teachers and High School Principals."

Herb taught vocational agriculture for nine years and served as a public school administrator for two years. He was President of the Vocational Agriculture Teachers Association of Texas in 1968-69. He has also served as President of the County Unit of the Texas State Teachers Association.

Special Editor for Pa., N.J., Del., Md., & W.Va.

Edward Shipley

An additional special editor whose biographical sketch will appear next month is Edward Shipley, Penn State, who will be responsible for Pennsylvania, New Jersey, Delaware, Maryland, and West Virginia.

Special Editor for the Carolinas, Tennessee and Virginia

John Todd

Dr. John D. Todd of The University of Tennessee, Knoxville, has been appointed as a Southern Region Special Editor for the *Agricultural Education Magazine*. The new special editor received the Bachelor of Sciences degrees at Middle Tennessee State University and The University of Tennessee. He also received a Master of Science degree from The University of Tennessee and graduated in 1972 from The University of Illinois with an Ed.D. in Vocational Education.

Dr. Todd taught vocational agriculture in high school in Tennessee for ten years and has been a member of the agricultural education staff at The University of Tennessee for nine years. His major responsibilities include undergraduate and graduate teaching in Agricultural Education and conducting in-service training programs for vocational agriculture teachers. He is a member of Phi Delta Kappa, Kappa Delta Pi and state and national vocational associations. He and his wife, Sue, have two daughters.

In his role as special editor, Todd will have the responsibility for soliciting and editing articles from Tennessee, North and South Carolina, and Virginia. He replaces Willie T. Ellis of North Carolina A & T State University.

(Atherton—from page 159)

The time for reaching adults and for improving agriculture is NOW. There is an urgent need for educators to commit themselves to serve this segment of the population. Making this a vital part of the program will include:

- Planning with community representatives,
- Going and finding those in need of instruction,
- Preparing for adult classes, and
- Involving the people. ◆◆◆

BOOK REVIEWS

FUNDAMENTALS OF MACHINE OPERATION: AGRICULTURAL MACHINERY SAFETY by Faculty and Staff, Agricultural Engineering Department of Michigan State University. Moline, Illinois: John Deere Service Publications, 1974. 334 pages, Price $6.95

This safety book is one of Deere Service Publications series, titled Fundamentals of Machinery Operation: Agricultural Machinery Safety. It is a well illustrated book dealing with safe operation of tractors and farm machinery. One chapter deals exclusively with human factors that cause most farm accidents. The book also deals with safety and precautionary procedures for handling and applying chemicals. Another section of the books covers safety with equipment around the home and farm, such as lawn mowers and chain saws.

Chapter titles are: Safe Farm Machinery Operation; Human Factors; Recognizing Common Machine Hazards; Equipment Service and Maintenance; Tractors and Self-Propelled Machines; Tillage and Planting; Chemical Equipment; Hay and Forage Equipment; Grain Harvesting Equipment; Other Harvesting Equipment; Materials Handling Equipment; Farm Maintenance Equipment; Glossary and Laws, and Suggested Readings and Index.

The text would be extremely useful in teaching farm safety in high school Vo-Ag classes, and Adult and Young Farmer classes. The text could also be very useful in area school and college agriculture classes.

An instructor's kit is available which contains the manual, transparency masters of illustrations in the text and other information which would be helpful to the teacher.

Verlin L. Hart
State Dept. of Vo-Tech Education
Vocational Agriculture Mechanics Specialist
Stillwater, Oklahoma

APPROVED PRACTICES IN RAISING & HANDLING HORSES, by Donald E. Ulmer and Elwood M. Juergenson. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1974, 326 pages. $6.75

The book includes a list of approved practices and activities involved in working with horses and horse equipment and information on how the practices should be done. The approved practices are those tried or tested by USDA and various agricultural experiment stations and successful horsemen. The book is somewhat condensed so as to include the basic practices without a vast amount of reading.

The contents are divided into eight chapters, as follows: Opportunities in the Horse Industry, Breeds of Horses, Breeding and Reproduction, Feeds and Feeding, Keeping Horses Healthy, Ailments, Diseases, and Parasites, Horsemanship, and the Horse's Feet.

Chapter one points out the recent growth in the horse industry and various types of employment related to the industry. The chapter on breeding is concerned with only the very basic genetic factors and systems of mating with major emphasis on the practical aspects of when to breed, conditioning the mare, handling the foal, and of stallion management.

The section on diseases and parasites lists some of the symptoms, causes, prevention, and treatment procedures for the more common horse problems. Included in the chapter on Horsemanship are practices related to horse psychology and the logic of riding, along with suggestions on how to train your horse.

The appendix includes a listing of the various breed association addresses and a listing of some visual aids available on a free or rental basis.

The authors are from Shasta College of California and the University of California-Davis respectively.

The book will be primarily helpful to beginning horsemen, vo-ag students, 4-H Club members, and 4-H Club leaders. Vo-Ag teachers and county agents may find it to be a useful reference.

William H. Adams, Jr.
Davidson County Community College
Lexington, North Carolina

LAW FOR THE VETERINARIAN AND LIVESTOCK OWNER, by H. W. Hannah and Donald F. Storm. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1974, 3rd Edition, 262 pp. $6.95

This book has very good information on the system of laws within the government of the United States and why laws are made. It also deals with why veterinarians are licensed to practice and how they obtain a license. This information takes up roughly one-fifth of the book.

After a basic introduction to the veterinarian profession, the remainder of the book deals with basic laws related to livestock which are of importance to the veterinarian and livestock farmer. This book contains practical information on the rights of a veterinarian while he is practicing medicine and what he may or may not do lawfully. There are also sections of the book which are solely related to the general livestock farmer. In one chapter, laws are covered which tell what a farmer's basic rights and duties are concerning fence laws with livestock. Another chapter deals entirely with the sale and ownership of livestock. This book has a very general nature to it concerning livestock and laws concerning them.

The two authors of this book are both well qualified to write on their subject. H. W. Hannah is a professor of Agricultural and Veterinary Medical Law at the University of Illinois and Donald F. Storm is an attorney. Many law cases are cited to verify much of the information which the two authors use.

In my opinion, the best audience would be a farmer who needs a good inexpensive book on farm livestock law to use as a guide in his farm library. This book should be used only as a guide and not as a lawyer. The book goes into enough depth that a farmer could have a good idea whether he is within the law when dealing with livestock law problems. This would also be a very good book for a vocational agriculture library because the information is practical and easy to read.

Ralph Stuekerjuergen
Mt. Pleasant High School
Mt. Pleasant, Iowa

(Clark—from page 165)

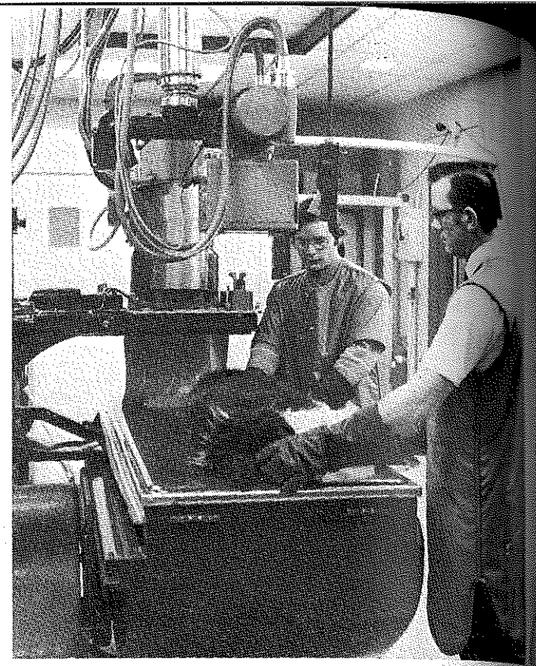
Earmuffs and earplugs, if properly selected, fitted, and worn, can help eliminate the health problem, but verbal communication between the teacher and student is further restricted.

Changing your instructional technique may be the best immediate answer to the shop noise problem. A classroom in close proximity to the shop area should be provided and utilized for transmitting the essential knowledge for the day's shop activities. Before the student activities and the associated noise begin, a mock demonstration can be given followed by an actual demonstration in the shop area. After each demonstration, students should be requested to ask questions and clarify all points which might be confusing. After the action starts, verbal communication will be supplemented by pointing, touching, and the reading of signs and other written material. It's impractical to stop the action of all students and tools in the shop each time individual instructions are needed.

What will future research and technology provide? Future researchers may redesign the shop interior to help eliminate or control the noise. When our society demands better communication in the noisy environment and is willing to pay the price, I'm sure we have the necessary technology for hard hat to hard hat intercom systems.

Don't wait for future scientific advances, act now and reorganize your instructional program and provide verbal instructions prior to the operation of the noise generating tools. ◆◆◆

ON-JOB-TRAINING — Students enrolled in urban Agricultural Education programs derive considerable benefit from supervised occupational experiences. Here Benny Campbell, a student at Booker T. Washington High School, New Orleans, Louisiana, is receiving on-the-job supervision from his agriculture teacher, Sidney Jordan. Benny is receiving training in ornamental horticulture at The Royal Orleans Hotel. (Photo by J. C. Simmons, Louisiana State Department of Education)

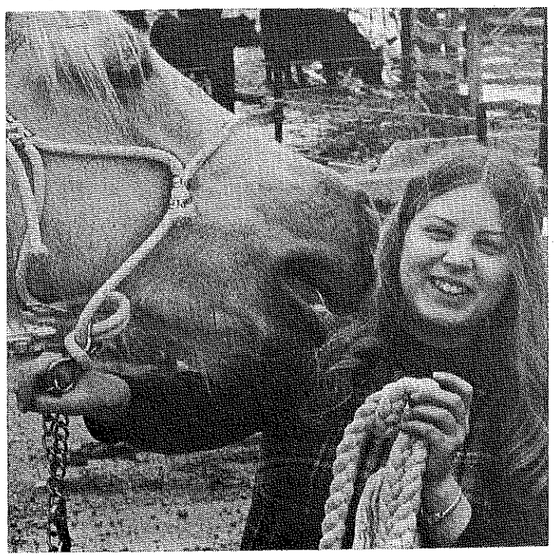


PET CARE IS BOOMING—Small animal care is a popular activity in urban agriculture. Millions of pets require medical treatment each year in the United States. In this photograph a sedated Collie is being positioned for an x-ray examination. (Photo from Eastman Kodak Company)

Stories in Pictures

by Jasper S. Lee

HORSES ARE FAVORITES—Large animals are popular with many urban students. Jane Cleveland, a student at Wilmington College, Wilmington, Ohio, is shown with one of her favorite animals. In addition to her personal enthusiasm for horses, she is planning a career in animal science. (Photo from Wilmington College)



AGRICULTURAL MECHANICS IS POPULAR—Many students like the hands-on activities of agricultural mechanics instruction. In this photograph, Sidney Crockett, agriculture teacher at Pulaski County (Virginia) High School, is demonstrating the use of engine analysis equipment. (Photo by Robert Veltri, Photo Lab, VPI & SU)

Agricultural Education

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Volume 47

Theme—PROGRAMS IN NATURAL RESOURCES