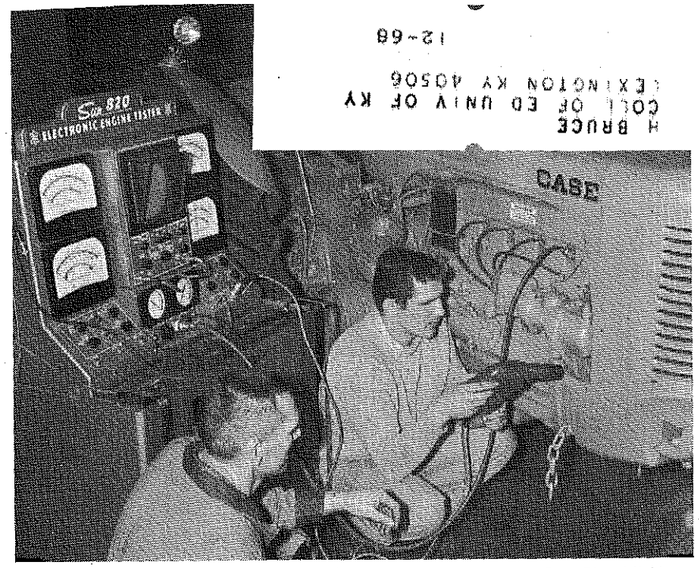
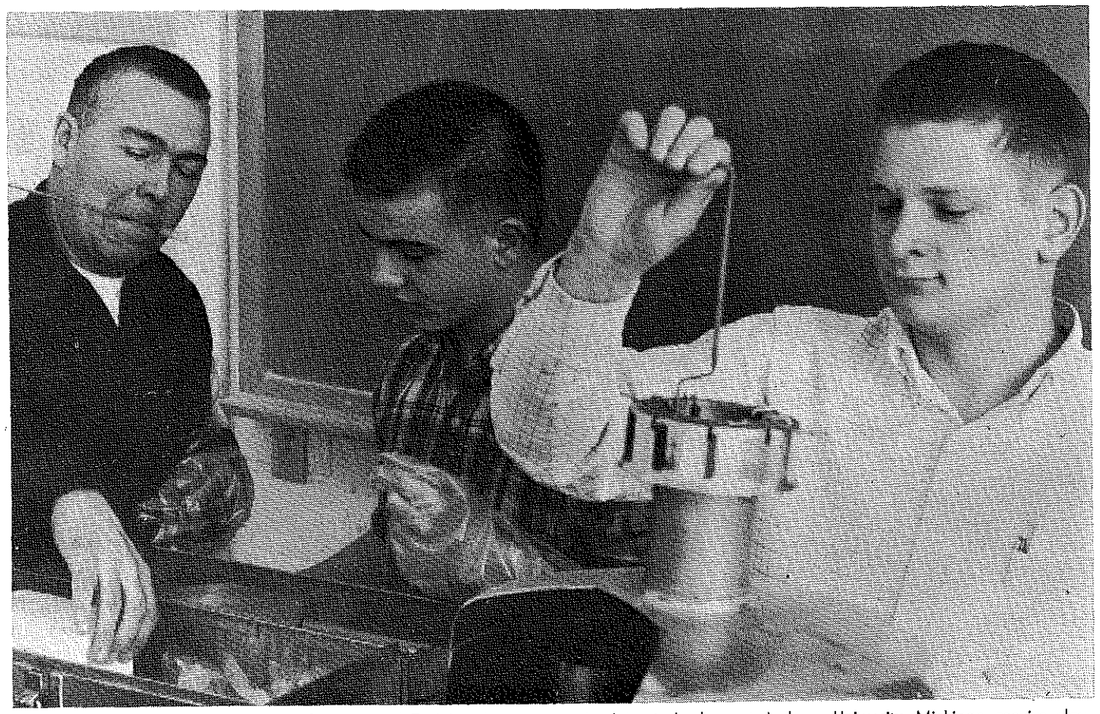


Students in a Manpower Development and Training Act program at Bay City, Michigan, learn complete overhaul and trouble shooting on tractor engines. Jack Monroe (right) is making a timing check under the direction of instructor Clayton Brice. (Photo by Edwin St. John, Michigan)

Stories in Pictures

GILBERT S. GUILER
Ohio State University

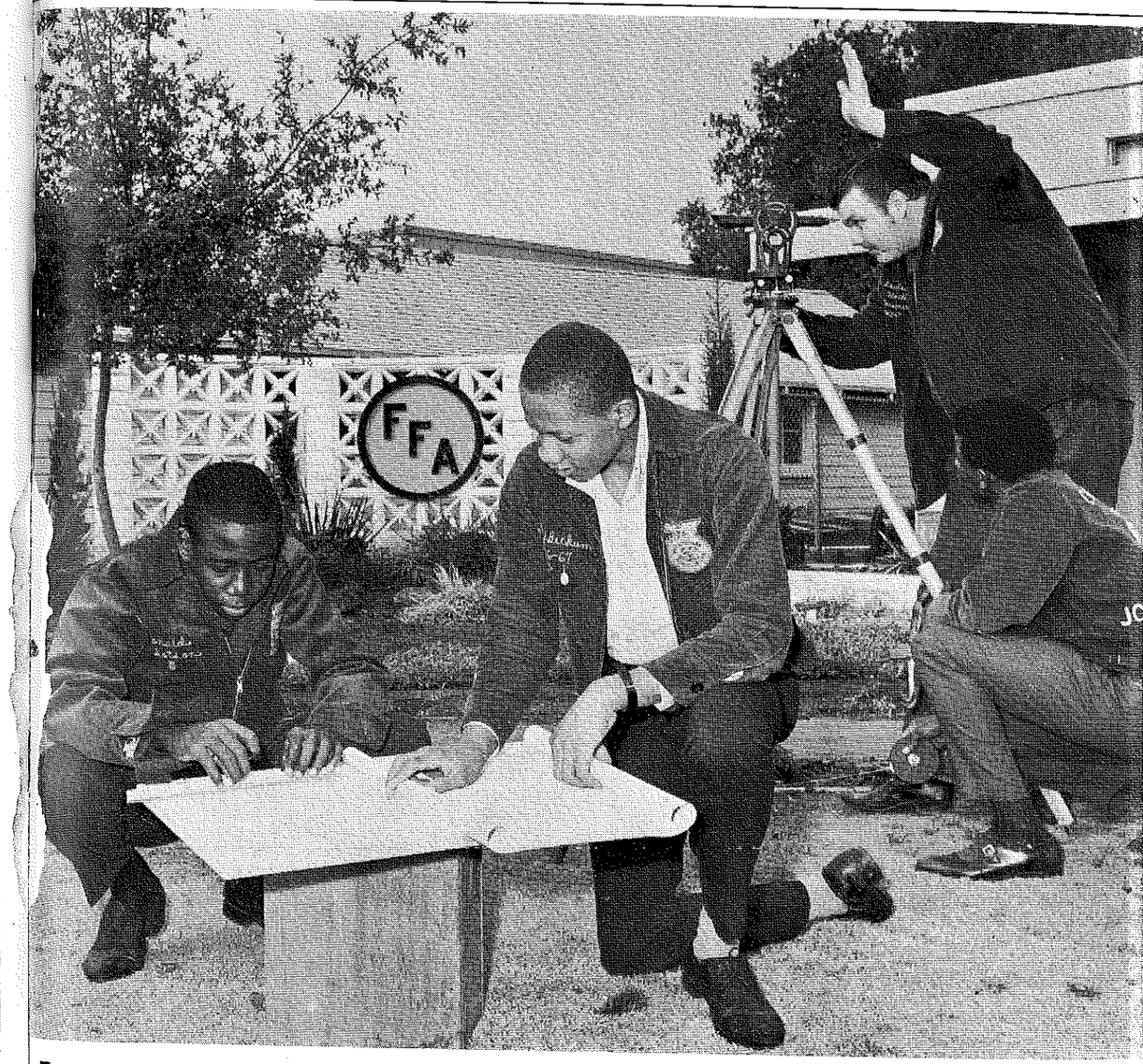


Students enrolled in a Manpower Development and Training Act program in dairy technology at Andrews University, Michigan, receive classroom instruction in artificial insemination. (Photo by Neil O. Snepp, Michigan State University)

AGRICULTURAL EDUCATION

Agricultural Education

Volume 41 October, 1968 Number 4



Featuring —

AGRICULTURAL EDUCATION IN CITY SCHOOLS

THE
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EDPRESS

Editorials

Guest Editorial . . .

Agricultural Education in City Schools


Jesse A. Taft

The development of vocational programs in city schools with offerings for those engaged in or about to enter an off-farm agricultural occupation is one of the major challenges facing vocational education in agriculture today. Some educators have stated that the establishment of instructional programs in agriculture and horticulture in city schools is one of the most promising areas of expansion.

Presently, too few cities offer agricultural education in their schools. Yet on the basis of job availability, programs in many off-farm agricultural occupations can be more justified in city schools than in rural school systems.

With exemplary and innovative programs receiving much attention in the new Vocational Education Amendments of 1968, it appears likely that funds will be forthcoming to activate a real movement in establishing vocational education in agriculture throughout the city school systems. Funds alone will not sell such programs. It will require aggressive leadership on the part of those engaged in curriculum planning and especially district and state supervisors of agricultural education. Promotion will be the order of the day if new and expanded programs in agricultural education are to be offered in more city schools by 1975. Under the Vocational Act of 1963, many cities have already expanded their vocational curricula with innovative and exploratory programs in agriculture. City school administrators are enthused with the results, especially those programs in the area of ornamental horticulture.

Experience with agricultural programs on both the secondary and post-high school levels has indicated that student interest in agriculture and horticulture is as much alive in city youth as in farm youth. For example, the City of Boston has maintained a five-teacher department of vocational agriculture since 1918 with emphasis on

(Continued on next page)

Jesse A. Taft is Program Officer, Vocational and Technical Education, Region I, U.S. Office of Education, Boston, Massachusetts.

Guest Editorial . . .

A Teacher's View: Girls in the FFA


Dino A. Petrucci

I feel that it is time we solve the problem that has been facing us for the past few years—girls in the Future Farmer organization. Several states have changed their constitutions to allow girls to be members of the FFA. During the 1968 State FFA Convention in California, action was taken to allow girls enrolled in vocational agriculture to become members of the California FFA.

We have accepted the job of training young men and women to fill the jobs in the nation's most vital industry—agriculture. Never before has our guidance been so needed and so critical. All of you know that most of the time we can sow the seed to make almost any decision take place that we desire. This situation is certainly no different than some particular activity you are planning in your local chapter. I think we can prepare delegates to the National Convention so that they have all the information required to make an intelligent decision when the matter is presented.

Legally we cannot keep girls from being Future Farmer members. The matter has been tested in at least five states already, and the decision has been that if a girl wants to be an FFA member, she must be allowed the full rights of a male member including that of holding an office. I feel that accepting girls into the organization by a vote of the members would be far better than being told by a court decision that we have to allow them into the Future Farmer organization.

I know that a number of arguments against girls in FFA has been presented. First, girls mature faster and therefore will assume all the leadership roles. Please look at this argument. How many girls have you had as student body president of your school? In mine we have ten boy presidents to one girl president; but when that girl is elected, she is elected because she is an outstanding leader. I am sure this would hold true in all the leadership roles

(Continued on next page)

Dino A. Petrucci, Director of Vocational Agriculture, Madera (California) High School, is President of the California Agricultural Teachers' Association.

Agricultural Education in City Schools

(Continued from page 79)

ornamental horticulture and dairy technology. An article describing that program is in this issue. If you examine the make-up of college of agriculture enrollments in recent years, you find many city youth are studying agriculture. In some states city youth now predominate in vocational agriculture programs as compared with the number of farm-reared students enrolled.

It is common knowledge that jobs are going begging for a lack of qualified applicants. This is a critical problem facing the agribusiness industry. As most of these jobs exist in urban areas, it is only logical to expect city schools to establish the type of programs needed to meet the shortages of trained individuals in agribusiness. Unfortunately school counselors, teachers of vocational agriculture, and state supervisors do not have reliable data on labor market demands. The employment services have little to offer in the categories of off-farm agricultural occupations. A nationwide survey to help overcome this situation is underway. In a cooperative venture the Departments of Health, Education and Welfare, Labor, Commerce, and Agriculture will sponsor a project to collect data pertaining to some 1,000 occupations related to agriculture and agribusiness. This data will be invaluable to city-school administrators especially since it will provide guidelines to justify appropriate curriculums to implement in cities where many of these industries are located.

Agriculture, including horticulture, has become a vast and complex industry requiring both skilled workers and technicians. To meet these demands training is now underway in a number of city schools where specialization is possible in one or more of the following curriculums: landscape gardening, park management, landscape design, aboriculture, plant and grounds maintenance, floriculture, turf, garden center sales and service, feed, seed, and fertilizer sales, food technology, meat cutting, small animal laboratory workers, and veterinarian assistants.

We are told that by 1970 two-thirds of the population in the United States are expected to live in cities of 50,000 or more. Countless numbers of job opportunities will exist for competent workers in off-farm agricultural occupations. I believe that today the greatest opportunity for expansion in agricultural education exists in the urban and city schools. The importance of preparing youth and adults for agriculturally related jobs has never before had the urgency the entire nation is facing today. With your assistance the progressive city school systems will be eager to cooperate in establishing programs which will prepare persons for attractive jobs in agricultural occupations. Let us meet these challenges and exert the leadership needed to implement programs of agricultural education in city schools.

Girls in the FFA

(Continued from page 79)

in our FFA organization—chapter, sectional, regional, and state.

The second argument I hear presented quite often pertains to supervision of mixed students at an activity. I offer this as a rebuttal—How many of you have attended fairs where 4-H girls participate? How is discipline handled there? I have attended events where both boys and girls were in attendance, and I have not observed any more trouble than when a group of Future Farmers met. As a matter of fact, I feel the boys are better behaved.

Some people argue that girls will take all the positions on judging teams away from boys. I don't really think this will happen primarily because there won't be that many girls involved. If boys have to work a little harder to take a position on a team away from a girl, won't this improve your overall team? It would mine.

A fourth issue presented by many people is "Why not form a Farmerette organization?" I know that teachers in one-man departments have enough to do without another organization to advise. A separate organization of Farmerettes for girls would certainly require additional work and a great deal of the teacher's time, especially in a one-teacher department. I even question having a Farmerette organization in larger chapters because this still means that one person must be responsible for the second organization.

When their education is terminated, our students are certainly going to have to compete against women for jobs in the fields of agriculture and agribusiness. I maintain that now is the time to teach them that this competition will be present. You and I can guide our Future Farmers to make the decision that is right. This is part of our job. I think we should guide delegates to the National Convention this year to vote an overwhelming "Yes" when this issue is presented.

Themes for Future Issues

November	***Supervision in Agricultural Education***
December	***Supervised Occupational Experience in Agricultural Education***
January	***Teacher Education***
February	***Agricultural Education in Area Schools***

THE COVER PICTURE

An extensive program of agricultural education is provided in the elementary, junior high, and senior high schools in Los Angeles, California. The cover picture shows vocational horticulture students at Fremont High School implementing a landscape plan. An article describing the program of agricultural education in Los Angeles is included in this issue. (Photo supplied by Ronald D. Regan, Supervisor for Agricultural Education, Los Angles City School Districts)

Cleveland

Horticultural Education in Cleveland

VINCENT J. FECK, Coordinator
Vocational and Technical Horticulture Education
Cleveland, Ohio

Instructional programs in horticulture have been offered in Cleveland public schools since 1904. The school garden program originated in 1904 and has grown to an enrollment of 21,500 students in 1967-68. Horticulture has been offered as a specialized subject in some high schools in Cleveland since 1911. Vocational horticulture programs were initiated in 1962, and in 1965 a post-high school technical program in horticulture was begun. Adult courses in horticulture have been offered since 1930.

THE GARDEN PROGRAM

The primary objective of the school and home garden program is to provide opportunities for learning the art and science of gardening through practice. During 1967-68 some 21,500 kindergarten, elementary, junior high school, and senior high school students were enrolled in the program. Students may enroll in either a home or school tract summer project. The garden is planted at home or on a tract of land owned or leased by the Cleveland Board of Education. Over thirty acres of land located in fourteen School Garden Centers provide opportunities for 5,000 students to garden each year.

The school and home garden program is supervised by more than 150 teachers. Teachers make several visits to the students' gardens during the summer to evaluate progress and provide instruction.

Achievement in school gardening is recognized. All students completing a garden receive a certificate and awards for successful gardening are sponsored by the Garden Center of Greater Cleveland. A Children's Garden Fair is held at the Garden Center of Greater Cleveland in August each year. In addition, some 100 exhibits and garden shows are held in schools each fall in conjunction with the first P.T.A. meetings of the school year.

VOCATIONAL HORTICULTURE

The largest vocational agriculture program in Ohio is in Cleveland. In 1967-68, 352 students were enrolled in vocational horticulture programs in nine high schools. Approximately 20 per cent of the students were girls. An enrollment of more than 375 is projected for 1968-69.

The Need

Horticulture is big business in Cleveland. Surveys conducted in 1965 revealed that there were some 2,000 individuals or companies employing over 4,000 full-time workers in agricultural, horticultural, and related industries. Cleveland's 100 acres of greenhouses has resulted in its being called the "Greenhouse Capital of the Nation." In the greater Cleveland area, there are over 20,000 acres in city and metropolitan parks, over 70 golf courses with more than 10,000 acres of turf, nearly 1,000 garden supply stores, over 200 florist shops, and 200 landscape contractors. Horticulture is the most important phase of the agricultural economy in Northeast Ohio. This information clearly indicates the need for and importance of vocational horticulture programs in Cleveland.

This elementary school student enjoys the school gardening program especially at harvest time.

Program of Instruction

High school courses in horticulture designed for students interested in horticulture as a career have been offered in Cleveland for over 50 years. Several of the staff members of the school system's Horticulture Division as well as many florists and landscapers in Cleveland received horticultural instruction in one of Cleveland's high schools. The school and home garden program and this specialized horticulture instruction in the high schools made it relatively easy to establish the state-aided vocational horticulture program in 1962.

Vocational horticulture is a three-year course of study beginning in the tenth grade. The major objective of the program is to prepare students for jobs in turf and park maintenance, floral production and arranging, landscaping, nursery production, garden and nursery supply sales and service, greenhouse vegetable production, and produce merchandising.

Horticulture I may be taken as a science elective in the tenth grade. Emphasis in the course is placed upon career opportunities, principles of plant growth, plant identification, soil science, and introduction to landscape design. Greenhouse and outdoor landscape projects are completed by students. Students are encouraged to complete home projects or to take part-

(Continued on next page)

Horticultural Education in Cleveland

(Continued from page 81)

time jobs in horticulture industries during the summer.

Students enrolled in Horticulture II study greenhouse construction and management, landscape design, plant propagation, insects and diseases, plant identification, landscape construction and maintenance, and production management. Qualified students are placed in horticultural industries during the summer months. Some students are placed in school greenhouses or assist with the maintenance of school grounds.

Seniors enrolled in Horticulture III are scheduled for four periods of instruction each day. These students work on a cooperative basis in a business or industry one-half day for four days each week. One day each week the students receive related instruction at school which includes discussions of problems related to the job, management practices, and sales techniques. During the winter months when there are limited opportunities for placement in some horticultural industries, students are engaged in classroom and laboratory activities at school such as advanced greenhouse projects and large-scale landscape planning.

Special Programs

Programs for disadvantaged youth are offered at two high schools. The major objectives of these occupationally oriented programs are the development of desirable work habits, manipulative skills, and improved character. Through these programs a number of potential dropouts have remained in school and graduated.

Students in the horticulture program at Thomas A. Edison High School obtain released time during the spring and fall to go out into nearby communities to perform landscape maintenance services. These activities are under the supervision of the vocational horticulture teachers. Some students are placed in surrounding schools under work-study programs with custodians serving as cooperating supervisors. These students perform landscape services for the school. Each student is paid for the work he performs and is required to establish a savings account and deposit 10 per cent of his earnings.

The Harry L. Eastman High School is a resident correctional school. Students in horticulture programs in this school operate a 1,500 sq. ft. greenhouse under the supervision of the teacher. Also, students are responsible for landscaping portions of the school grounds. When these students return to their home school they are eligible to continue in the second year of vocational horticulture. Should they decide not to return to school, most have learned skills necessary for employment.

Supervised Occupational Experiences

Most students in the Cleveland schools do not have opportunities to conduct occupational experience programs at home. Prior to age 16, it is difficult for students to find part-time employment in horticulture industries. So, tenth grade students are encouraged to complete home gardening or landscape improvement projects.

Qualified eleventh- and twelfth-grade students are placed in commercial horticulture industries including florist shops, landscape companies, garden stores, parks, and golf courses. The employer, student, parent, and teacher sign an agreement indicating the conditions for the on-the-job training period. Students are required to keep a record of experiences and earnings. Periodic evaluations of students' progress are made by teachers and employers.

Some students are hired as assistants to work in school greenhouses and on landscape demonstration plots or school grounds. Several students conduct small landscape maintenance service operations in their neighborhoods. Services performed include mowing, fertilizing, and spraying grass, trimming and pruning shrubs, and planting and weeding flower beds.

Facilities

Facilities at the nine high schools which serve as vocational horticulture centers vary in size and quality from 300 to 7,000 sq. ft. of greenhouse space and from 1,500 sq. ft. to 30 acres of land laboratory space. Within the past two years, 10,600 sq. ft. of new greenhouse and related facilities have been constructed with state aid at three vocational horticulture area skill centers.

The area skill centers serve several schools. Students may enroll in Horticulture I in their home school and take Horticulture II and III at an area skill center. Teachers in feeder schools also may bring classes to the skill centers for special demonstration and practice that is not possible in the feeder schools. The city of Cleveland in cooperation with the State Department of Education is initiating another area skill center this fall. The new skill center will serve three high schools and the post-high school technical program.

A greenhouse superintendent is employed full-time to manage the greenhouse at each of the area skill centers. The greenhouse superintendent plans a management program with the horticulture instructors which will be educational and useful in providing plants for classroom and home garden projects. During the school day students share in maintaining the greenhouse plants. On weekends and during vacations periods students are hired part-time to assist in growing and maintaining greenhouse plants.

Avocational programs

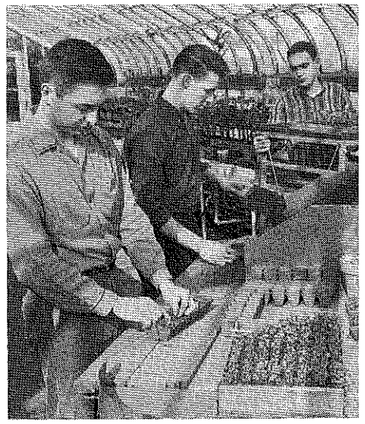
Prevocational courses are offered in conservation, flower arranging, and home horticulture. The courses meet for one period each day for one or two semesters. Many of the students completing these courses in the ninth and tenth grades frequently enroll in vocational horticulture the following year or semester.

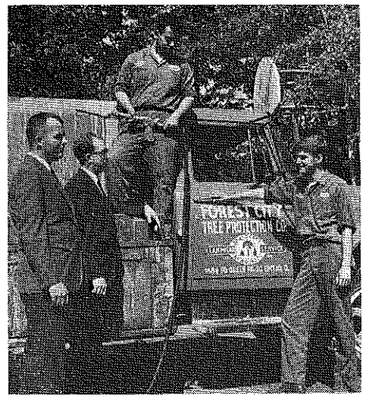
Youth Organizations

Youth organizations are encouraged in each of the vocational horticulture programs. FFA chapters have been started in several of the schools. With changes in name and ceremonies, FFA has been adapted to urban vocational horticulture programs. The FFA chapters in Cleveland are called Future Agriculturalists or Hort Clubs. The West Tech High School FFA, winner of several local and state horticulture contests, had one member who received the State Farmer degree in 1967-68 and also had the State Ornamental Horticulture Award winner in 1967-68. Changes in the State FFA Association to allow membership for girls and the addition of horticulture contests and awards have made FFA more attractive to urban youth.

(Above)
Girls enrolled in vocational horticulture programs are interested primarily in floral work. Here a high school student receives practical sales training on the job.

(Below)
High school students enrolled in vocational horticulture at West Tech High School get experience in transplanting in the greenhouse during school laboratory time.





(Above)
Technical education students Angelo Cammarata and Nick Costello receive on-the-job training at a tree protection company. Bill Fry (left) is manager of the company and serves as a part-time instructor in the horticulture technology program. Standing next to Mr. Fry is Vincent J. Feck, Coordinator of Vocational and Technical Horticulture Programs for the Cleveland Public Schools.

TECHNICAL EDUCATION

In 1965 local and state advisory committees supported the establishment of a two-year post-high school horticulture technology program at the Cleveland Technician School. The primary objective of this program is to prepare students for foreman and supervisory level positions such as park foreman, gardener, landscape and nursery foreman, assistant golf course superintendent, greenhouse grower, and horticulture supply salesman.

Students receive twenty-five hours of instruction per week. Subjects emphasized in the curriculum include plant culture and propagation, landscape design, human relations, leadership, business principles, selection and use of chemicals, and equipment maintenance. Courses of study are offered in ornamental horticulture and turf management.

Eight of the nine part-time instructors in the technical program hold college degrees in horticulture and are employed full-time in horticulture industries. In-service education conferences conducted by the state supervisory and teacher education staffs, as well as guidance from the local supervisory staff, provide information on teaching techniques and related topics.

The technical courses are taught at Max S. Hayes Vocational School. A new Horticulture Education Center at Washington Park presently under construction will provide new greenhouses and 30 acres of land laboratory for a nursery, arboretum, formal gardens, and turf plots.

ADULT EDUCATION

Adult courses in gardening, landscaping, and flower arranging have been offered by the Garden Division of the Cleveland Board of Education since 1930. Vocational courses for persons employed in horticulture industries have been offered in two vocational centers for the past three years. An advisory committee of enrollees selects the subjects to be discussed in the ten or twelve-week courses. Courses have been offered in turf management for landscapers and golf course employees, landscape design, turf equipment maintenance, insects and diseases, and plant identification. Enrollees include park employees, landscapers, garden center owners, and horticulture supply salesmen. Follow-up visits are made on the job to determine the extent of implementation of practices and to identify new problems for study.

ADVISORY COMMITTEE

An important element in the success of the vocational and technical programs in horticulture in Cleveland is the Advisory Committee of persons in the horticulture industry. This committee makes many contributions in studying job opportunities, locating placement stations, and developing the educational program.

The committee is made up of twenty-five industry leaders from city and metropolitan parks, horticulture sales and supply companies, chemical companies, the Golf Course Superintendents' Association, Landscape Contractors Association, Ohio Nurserymen's Association, Florists' Association, Greenhouse Vegetable Growers Association, The Cemetery Association, Arborists' Association, and private and public companies. The general advisory committee meets two times per year. Subgroups of the general committee meet as needed throughout the year. The chairman of the general committee, a horticulture industry representative, is elected annually.

Los Angeles

A Comprehensive Program of Agricultural Education in Los Angeles

RONALD D. REGAN
Supervisor of Agricultural Education
Los Angeles, California


Ronald D. Regan

The second largest city in the United States with a population in excess of three and one-half million people may be unique with its extensive programs in agricultural education. Since 1908, programs in agricultural education have been an integral part of the comprehensive junior and senior high schools in the Los Angeles City School Districts. Thirty years ago the major emphasis was in production agriculture. Today, agricultural education in this large urban setting is providing vocational and avocational programs for the junior and senior high school students.

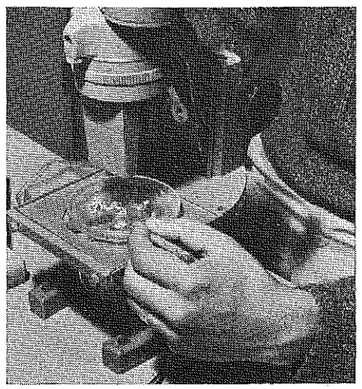
Elementary Education

Instruction in agricultural education begins at the elementary level. Nine elementary Agriculture-Science Centers are located throughout the school district. Trained staff conduct demonstrations and lessons for the elementary school children who are bussed to the centers. In addition to these nine centers, four mobile units are used. The Dairy, Conservation, Small Livestock, and Wild Life mobile units each have a specialist and an animal caretaker-truck-driver. The units are brought to the elementary schools upon request. The requests for these units are so great that they usually visit the 440 elementary schools once during a six-year period. Instructional materials and equipment are also available to teachers from the elementary Agriculture-Science Centers.

Junior High School Programs

Taking part in our agricultural education programs are some 21,000 junior and senior high school students in 45 junior high schools and 35 senior high schools. In grades seven through nine, three course offerings are provided: Exploratory Horticulture, Horticulture, and Floriculture. Every seventh-grade boy is enrolled in a ten-week exploratory horticulture program. In this program students are introduced to basic information on plant growth and horticultural practices. Each week students receive one hour of classroom instruction and four hours of laboratory activities. Broad instructional areas of the agricultural industry are included for career exploration also. Students who develop an interest in this area of instruction may enroll in the eighth and ninth grades in a two-year elective course in horticulture.

(Right)
Girls enrolled in a floriculture course in high school construct a floral arrangement.



Girls at the junior high school level are also included in our program of agricultural education. An elective course in floriculture has been offered for the past thirteen years. This semester course includes basic information on plant growth and horticultural practices along with experiences in corsage construction and floral arrangement.

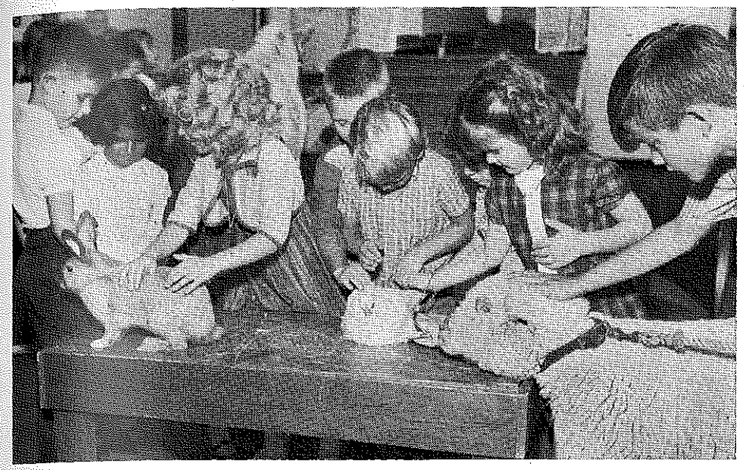
Facilities for instruction in agriculture and horticulture have been standardized. Every junior and senior high school built since 1950 includes the following facilities: classroom, laboratory room, lath-house, glasshouse with outside storage facilities, and one acre of growing grounds.

High School Programs

The high school programs are more diversified and intensive. Courses are provided for academic, vocational, and general students.

Plant and Soil Science is a one-

(Left)
A student enrolled in a plant and soil science course tabulates the results of germination experiments.


The first touch—Animals from the small livestock unit during a visit to an elementary school.

year, laboratory science course meeting the University of California entrance requirements. This course is designed to attract academically-inclined students. In addition to regular classroom instruction which involves demonstrations and experiments, actual implementation of scientific principles and how they relate to plant growth are accomplished in experimental plots. Extensive use of the glasshouse and lath-house are also utilized for plant growing experiments. A survey conducted in 1966 of students who had completed this one-year course at three of our high schools revealed that 63 per cent were continuing their education in four year colleges in the agricultural sciences. Five additional high schools are now offering this program.

The traditional vocational agriculture program with its accompanying FFA activities have been offered in six of our high schools for over thirty years. These programs are a continuing success in this urban area in meeting the needs of the terminal student as well as providing an incentive to the college bound student.

Seventeen high schools now offer programs in vocational horticulture. This vocational program for urban youth is both terminal in nature and serves to attract college-bound students. The ornamental and landscape industry in Los Angeles and other areas of Southern California is a multi-million dollar industry. Our surveys and estimates by our industry advisory committee indicate a continuing growth of employment opportunities in this field. A survey of our graduates in 1967 revealed that six months after graduation over 90 per cent were employed in the area for which they had received training or were continuing their education in agriculture at institutions of higher learning.

Floriculture courses are also offered at the high school level. The course is designed primarily for girls. The instruction in this two-semester course includes propagation of plants, growing of ornamental and floral type plants, use of floral materials in interior and exterior home beautification, floral arrangements, and corsage construction. Many girls gain sufficient experience through this course to gain employment in local flower shops as floral designers. One experimental vocational floriculture course is presently being conducted with the primary purpose of training girls for entry-level positions in the floral industry.

General horticulture courses are offered also. These courses provide students in grades ten, eleven, and twelve, general and basic information and experiences in the field of ornamental and landscape horticulture.

New Courses

A new vocational course in Landscape Design and Construction is presently being offered in three high schools. This two-semester course provides further specialization in vocational horticulture.

A new vocational program started at two high schools this fall is a Laboratory Animal Technician Course. This two-semester course is designed for eleventh- and twelfth-grade students. High school students in this course will be trained for an entry-level position as a junior animal technician. Teaching staff for this specialized program received training this past summer in the animal laboratory at a local Veterans' Administration Hospital. Facilities for this course, in addition to the standard classroom and laboratory, include an environmental-controlled laboratory animal room. Stainless steel multi-banked cages are being utilized to house the laboratory animals.

Occupational Experience Programs

Vocational students are required to have projects and maintain record books of their activities. Projects may be of a productive work-experience or home improvement type. In 1967 our students had invested or earned a total of $96,161 from productive projects or work-experience earnings. Of this amount, $40,759 represents student productive projects.

An interesting avenue in providing work-experience activities for some vocational students has been under the auspices of the work-study provisions of the Vocational Education Act of 1963. The students in the work-study program were employed in the area of landscape and nursery maintenance with our school gardening staff and with personnel from the Parks and Recreation Department of the city. This type of employment experience is an excellent tool for developing proper attitudes and work habits and for developing self-confidence.

FFA

An integral and important part of our vocational programs is the participation of students in FFA activities. Currently fifteen high schools have FFA Chapters, an increase of over 100 per cent during the past three years. Our goal is that every vocational department will have an FFA Chapter. This outstanding youth program has provided our urban youth immeasurable benefits in leadership training, opportunities to participate in fairs and shows, judging, speech and parliamentary procedures teams, and experience

(Continued on page 87)

Philadelphia

Ralph E. Bartholomew

A High School of Agricultural Sciences

JAMES C. FINK, Supervisor
Pennsylvania Department of Public Instruction

and

RALPH E. BARTHOLOMEW, Principal
Walter Biddle Saul High School of Agricultural Sciences
Philadelphia, Pennsylvania

James C. Fink

What is a high school of agricultural sciences doing in Philadelphia, Pennsylvania? By reading want ads in many city papers you will be convinced quickly of the need for the instruction offered at Walter Biddle Saul High School of Agricultural Sciences in Philadelphia. Demands by parents, pupils, and employers for more functional instruction enabled this school to initiate new programs and establish better facilities for instruction in agriculture.

The Program of Instruction

Three years ago approval was secured from the Pennsylvania Department of Public Instruction to initiate a pilot program in agricultural education in the school. This effort led to the founding of the Walter Biddle Saul High School with new curriculum, staff, equipment, and buildings.

Walter Biddle Saul High School is a vocational and technical school specializing in agriculture and is an integral part of the Philadelphia Public School System. The school accepts students from the entire city. There are also three tuition students from independent school districts outside the city and two students from the country of Haiti. All students attending the school are enrolled in agriculture.

Enrollment in 1968-69 will exceed 400 students. Approximately 100 of these students are girls. Ten teachers of agriculture will be required. The teachers are under the supervision of Agricultural Program Coordinator. The program coordinator not only has the responsibility of coordinating the agricultural curriculum but is also responsible for the students' supervised work experience programs whether this be on the school grounds or at an approved work experience center.

Prior to starting the pilot program, the school offered only one general agricultural course. Now there are courses in agricultural production, agricultural business, turf technology, meat cutting, agricultural machinery sales and service, commercial horticulture, and animal technician training.

Ninth- and tenth-grade students receive a general background in agriculture. This instruction consists of a series of ten, seven-week courses. During the freshman year, the seven-week courses are in careers and occupations, animal science, conservation, crop production, and the meat industry.

In the tenth grade courses the units taught include agronomy, horticulture, animal production, farm mechanics, and agricultural business. Near the completion of the tenth grade, students select one of the seven specialized courses. The specialized courses taught in grades eleven and twelve prepare students for entry into an agricultural occupation or for admission to college.

Students receive in addition to their agricultural major either an academic or a general course of study. The academic program meets all college admission requirements including two years of a foreign language, biology, chemistry, physics, algebra, geometry, and trigonometry. The general course does not require language or algebra but does require more science and general mathematics.

Selection of Students

Students are recruited from approximately thirty of the city's junior high schools. The school's Coordinator of Vocational Agriculture is regularly invited to junior high schools throughout the city to discuss careers and explain the school's instructional program. Both boys and girls from all areas of the city apply for admission.

(Below)
These freshmen students are studying an introductory unit in poultry production. (Photo by Philadelphia Daily News)

Seniors specializing in horticulture propagate horticultural plants as a part of the instructional program. (Photo by Philadelphia Daily News)

Students in the course on agricultural production study poultry production. The school's laying flock, which is used primarily for instructional purposes, produces 1,000 dozen of eggs each year. (Photo by Philadelphia Daily News)

After a student has applied for admission, the school's counselor asks the student's home school to forward information regarding scholastic records, attendance records, and test scores. The student and his or her parents are interviewed prior to admitting the student. Upon admission to the school each student must spend twenty days during the summer prior to entering the ninth grade in a program of orientation at the school.

Orientation

During the twenty days of orientation the faculty determines whether the student can profit from the instruction at the school and thereby return in the fall or if the student should be transferred back to his local high school. The summer program orients the student to opportunities in agriculture. All students have an opportunity to work with crops and animals on the 78-acre farm. Students assist with planting, cultivating, harvesting and other agricultural jobs which cannot be duplicated during the regular school term. During this period much work is done with the greenhouses, turf plots, the fields of vegetables, and pasture fields. The registered Holstein herd of nineteen cows and the flocks of laying hens also receive the attention of students during this period. This is a time when students work closely with the teachers of vocational agriculture and the vocational agricultural coordinator.

Facilities

New facilities include a 40′ x 100′ dairy barn with space for twenty-one cows, a poultry house, a commercial size greenhouse, a 40′ x 100′ agricultural mechanics shop, an animal technicians training laboratory, a meat cutting building, an agronomy laboratory, and a modern new library plus the regular facilities associated with most high schools.

Seventy-eight acres of farm land offer the teachers considerable opportunity for demonstrations and instruction in animal and corp production with modern agricultural machinery. The school has a full-time nonteaching farmer who manages the dairy herd and is available to plant, cultivate, or handle jobs in conjunction with the instructional program.

Each instructor has specialized equipment available. For example, the turf grass instructor has a tractor equipped with a york rake, a push blade, and a pull blade, a variety of mowers, tillers, disks, harrows, seeders, plows, sprayers and soil shredders. The horticultural instructor has a completely equipped two-section greenhouse with an attached potting shed plus equipment to handle a commercial nursery.

Advisory Committees

Each of the seven specialized courses has an advisory committee which functions in many ways. For example, the advisory committee for the animal technician training course suggested what should be taught and planned the building for student experiences with laboratory animals. This group had a knowledge of employer demands and the training needed. The committee also helped in developing a Senior Animal Technician Training Course which recently graduated fifty-three adults for twenty-seven different firms and agricultural employers.

Student Organizations

To offer instruction which gives each student a full vocational and technical agricultural education and adequate academic courses, many of the usual high school activities have to be sacrificed. There is not sufficient time for inter-scholastic sports, art, music and the like. The major student activities are the Future Farmers of America Chapter with 120 members, student government, student publications, and a visual education club.

The administration and teachers of the Walter Biddle Saul High School of Agricultural Sciences feel that the objectives of their school are to provide training for pupils planning careers in farming, farm management, and off-farm agricultural occupations; to provide basic education for pupils who plan careers in agriculture or agriculturally related fields requiring college training; and to provide exploratory opportunities of an educational and vocational nature. It is their goal that every student graduate with a salable skill or be equipped to continue his or her formal education in a chosen field.

Agricultural Education in Los Angeles

(Continued from page 85)

camaraderie among students of similar goals.

In addition to the regular local, regional, and state FFA activities, two additional contests are conducted each year: a Horticulture Contest sponsored by the chapters of the Southern California Association of Nurseryman, and a Los Angeles Beautiful Planting Contest sponsored by the Sears-Roebuck Foundation, Women's Architectural League, and Los Angeles Beautiful Incorporated. Both of these contests are open to all junior and senior high school students.

Importance of Agricultural Education

Agricultural education has a great responsibility in the educational programs of today. The demand for college graduates in agriculture is great. Agricultural education must help supply students who pursue further education in the agricultural sciences. Vocational education in agriculture which prepares students for immediate employment is needed. And we in agricultural education have a major responsibility for providing information to a broad segment of students concerning the importance of agriculture in our economy and the dependency of urban areas on the products of the agricultural industry.

Boston

A LOOK AT AGRICULTURAL EDUCATION IN BOSTON — The First Fifty Years

EDMUND C. SPRISSLER, Teacher of Agriculture
Jamaica Plain High School
Boston, Massachusetts

Edmund C. Sprissler

The year 1968 marks the fiftieth anniversary of agricultural education in Boston. In September 1918, the Boston School Committee established a state-aided instructional program in agriculture so that students who had interests in agriculture and horticulture could continue study in these areas at the high school level. Jamaica Plain High School was selected to provide the courses because of its proximity to Arnold Arboretum, Franklin Park, the large estates of Boston's residential area, and the commercial agricultural and horticultural enterprises that flourished on the fringes of the city.

Program of Instruction

The instructional program at Jamaica Plain High School is divided into the agricultural division and the horticultural division. Instruction in both divisions includes classroom and project study.

Students in the agricultural division study general agriculture, animal science, dairy technology, and agricultural survey which includes an orientation to agriculture and a study of problems in agribusiness. Students in the horticultural division major in either floriculture or landscape gardening. Conservation is also taught in the horticultural division and a program in wood technology was started in September, 1968.

In addition the students receive shop instruction each year they are enrolled in the program. Instruction in this area includes home and agricultural mechanics, small power equipment repair, sheet metal, use of hand tools, welding, and related topics.

Instruction in mathematics and biology is closely correlated with instruction in agriculture and horticulture. The curriculum is designed to meet the needs of both the vocational student and the student who plans to study agriculture or horticulture in a college, university, or other type of post-high school institution. Students spend 50 per cent of their time studying agriculture or horticulture. The other 50 per cent of the school day is spent in academic subjects.

Students Enrolled

Any boy fourteen years of age who has completed the eighth grade and has some experience in horticulture or agriculture is eligible for enrollment. Girls are admitted in Grade 10. Applicants are expected to show an interest for the various courses by previous experience in school or home gardening, work on farms, or work in horticultural businesses. We recommend that students get experience in one of these activities or a related activity during the summer prior to his or her admission to the program. These experiences are supervised by instructors from the school. We desire students who have the ability and willingness to succeed and who have a keen interest in agriculture or horticulture.

Since Jamaica Plain High School is the only local high school offering instruction in horticulture and dairy technology, students are admitted from any section of Boston. A waiting list must be maintained for these courses. Other students come from all sections of the city, many coming from what are considered to be depressed areas. These students often prove to be very responsive and find an outlet for their energies in the supervised work program. Many surrounding cities and towns do not offer instruction in agriculture and horticulture, so we have tuition students from these areas. A representative of Jamaica Plain High School visits the local elementary schools to acquaint prospective students with the curriculum offered in agriculture and horticulture.

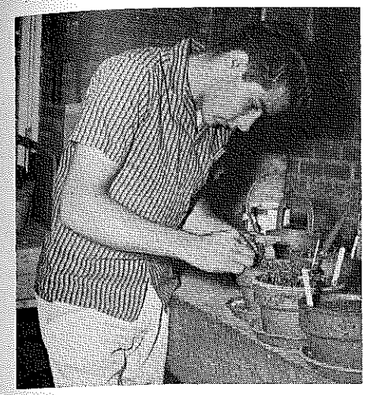
The program began with six city boys enrolled in 1918. Annual enrollment now numbers from 90 to 100 students. In 1967-68, enrollment included 25 freshmen, 35 sophomores, 20 juniors, and 20 seniors.

Laboratory Facilities

One disadvantage of having an agriculture department in a school in the heart of a large city is the lack of a school farm. This problem is helped somewhat by our nearness to Arnold Arboretum and Franklin Park, both of which are within walking distance from the school. These two facilities together with the parks of Boston give the school almost 500 acres of laboratory.

We place a great deal of emphasis on field trips. We take many field trips to dairy plants, farms, greenhouses, wildlife parks, lumber yards, and other places that are related to the instruction being offered. We transport students in the school's bus or nine-passenger station wagon.

The dairy technology laboratory is well equipped. Visual aids such as films, films strips, transparencies, and charts are used extensively by the instructors.



(Above)
Students in the horticultural division at Jamaica Plain High School study the propagation of plants.

(Below)
A student checks the quality of corn for market delivery.

Supervised Occupational Experience

Supervised occupational experience is provided for all students. We have three types of occupational experience activities: after-school and week-end occupational experience; seasonal occupational experience; and summer occupational experience. Each student is encouraged to participate in after-school and week-end occupational experience programs.

Seasonal occupational experiences usually occur during holiday periods such as Thanksgiving, Christmas, and Easter. We are fortunate in being near the Boston Flower Market as well as many garden centers and flower shops which provide opportunities for student employment experiences. The length of this seasonal experience may vary from two to three days to two or three weeks. Often as many as 50 per cent of our students are involved in this type of experience program. Frequently a student in horticulture or landscape gardening, working on a seasonal basis, becomes a full-time employee for a summer placement period.

The minimum requirement for the summer occupational experience is eleven weeks after the first of June. This allows a three-week vacation before school begins in the fall; however, many students remain on the job until school opens. If students are in good scholastic standing, have a satisfactory place of employment, and have the consent of their parents, they may be dismissed for occupational experience as early as the first Friday in May each year thereby permitting a fifteen-week experience program. This plan applies only to vocational students and not to those preparing for future study in two-year or four-year colleges.

During the summer occupational experience period, the student is visited every two weeks by a teacher from the high school. A lesson is taught whenever possible on these visits. The teacher confers with the employer and the student during the instructional visits.

Follow-up of Graduates

Since the instructional program in agriculture was initiated at Jamaica Plain High School in 1918, hundreds of the graduates have furthered their education at the University of Massachusetts and other New England universities. Many have completed graduate study. Graduates of the program have entered the various fields of agriculture and related vocations.

Many of the graduates hold excellent positions. Positions held by graduates of the agricultural and horticultural programs include president of the American Botanical Society, provost of a state university, university faculty members and department chairmen, tree experts, greenhouse supervisors, florists, wholesale flower salesmen, and county agents. A survey of graduates from 1962 to 1968 indicated that more than 20 per cent studied agriculture or horticulture in post-high school institutions. Another 12 per cent continued their education beyond high school in fields other than agriculture.

Financing and Staff

The instructional program in agriculture at Jamaica Plain High School was initially established under the provisions of the Smith-Hughes Act. The program continues to operate as a state-aided program by which the city of Boston is reimbursed by the State Department of Education for two-thirds of the teachers' salaries. This differs from the county agricultural high schools in Massachusetts which are reimbursed for one-half of all operating expenses including salaries. The staff in agriculture and horticulture at Jamaica Plain High School includes a program coordinator, a landscape and conservation teacher, a floral and horticulture teacher, a dairy technology and animal science teacher, and a teacher in agricultural mechanics.

Summary

Instruction in agriculture and horticulture is presently and has been in the past very popular with the people in Boston. The success of the program bears out the prediction of the Boston School Committee in 1918 when they stated that "city people would respond to such a program." The success of the program is due to its excellent reputation and the active participation and support of the graduates of the program.

Miami

Agricultural Education in Metropolitan Miami

FRED C. MURRAY, Director
High School Vocational-Technical Education
Miami, Florida

Metropolitan Miami is noted for its sunshine, white sandy beaches, and gay night life. Thousands of Americans flock to this mecca as the panacea for the ills of the northern winter and find employment in the ever increasing light and heavy industry in this section of the state. Many retirees also reside in Metropolitan Dade County. In spite of tourism, industry, and other changing trends, Dade County and the City of Miami have not excluded agricultural education for the school system.

Agriculture in Florida

It is true that school yards and factories now occupy the pastures where the cattle formerly grazed in the state's top dairy area. The livestock industry at present is somewhat limited but poultry production is increasing rapidly. The production of winter vegetables is still a substantial part of the economy of the county and the advent of many new homes has placed an increasing demand for ornamental horticultural products and services. There are many ornamental nurseries in Miami as well as numerous lawn, landscape, and maintenance organizations and countless home and garden supply stores.

The needs of persons who desire to enter into the related agricultural industries in this area and those who desire training in agricultural occupations are being met through an extensive and well-organized program of vocational education in agriculture in Dade County including the City of Miami.

The Miami School Farm

The oldest and best known program in vocational agriculture in the city is located at the Miami School Farm in North Miami. The present site is part of an eighty-acre tract which was deeded to the Board of Education in 1922. The location was a rural area at that time, and the students had to be housed in dormitories as transportation was not available for city boys wishing to take agriculture at the farm. The first facilities included a single classroom and workshop and fourteen rooms for students and faculty dormitory accommodations. In 1949 the dormitories were converted to additional classrooms and a large shop area was added. In 1960 an entire new plant was constructed. Only twenty acres of the original eighty acres are now used in the agriculture program.

The Miami Farm is staffed with five teachers of agriculture. A full-time secretary-bookkeeper is employed as well as a person for the maintenance of facilities.

Present facilities include two permanent classrooms and two portable classrooms, an office, a shop and storage shed, washroom, a nursery work area, two shade houses, steer pens, laying house, brooder house, and a poultry and cattle feed room. Equipment includes tractors, plows, tillers, disks, cultivators, mowers, spray rigs, and farm trucks.

Students Enrolled

One hundred and seventy students who are interested in agriculture are selected from grades ten, eleven, and twelve in local high schools. These students are bussed to the School Farm for two-hour blocks of instruction and then returned to their home schools.

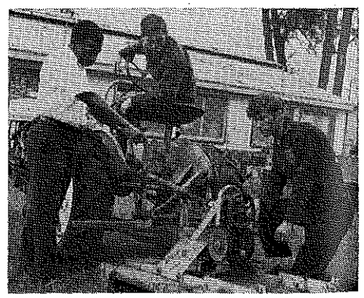
Other schools within commuting distance of the farm have indicated interest in the program. At the present time the Board of Education permits any student interested in agriculture to transfer to one of the schools using the School Farm facilities.

Supervised Experience Programs

All students are required to maintain a supervised experience program. Most students live in the city, they conduct their projects on the School Farm. Emphasis is placed on the production of ornamental plants as projects related to instruction in plant science. While most students have ornamental projects, other areas of agricultural production are available to meet the individual interests and needs of students.

All activities in the project areas are student oriented. Most students market their plants before they are a year old. For an average year, sales amount to over $89,000. A large portion of this amount comes from nursery sales. The nursery handles in excess of 50,000 plants annually.

The poultry area includes ten individual cage houses for boys' projects. Each house holds 96 birds. Each boy is responsible for the management of his hens and the marketing of his eggs. The FFA chapter raises about



Ulysses S. Glee (left), Teacher of Agriculture at Douglas MacArthur High School in Miami, instructs students in the operation of equipment.

Instruction in poultry production is provided in the vocational agriculture program at the Miami School Farm.

1,500 chicks annually and they are sold to students for use in their projects. The balance is kept in one large house with the eggs being retailed to the public.

Twelve acres of the farm are devoted to vegetable raising. Student projects consist of crops such as onions, squash, turnip greens, beans, strawberries, and peas.

Each year the boys feed out approximately twelve steers. These steers are sold through a local fat stock show organized by the agriculture faculty and the Dade County Youth Fair.

Courses Offered

The course offerings at the School Farm consist of Basic Agriculture Science for boys in the tenth and eleventh grades. For twelfth-grade students, Advanced Agriculture courses are offered in specialized areas of interest to the students.

The instructional program at the School Farm was expanded last year to serve the entire county and now includes an agriculture occupational program in meat cutting for seniors who have completed the Basic Agriculture Science courses. These students receive instruction for one class period per week where they are given instruction in employee and employer relations, basic information concerning the meat cutting industry, and other related information. They are placed in meat markets throughout the metropolitan area and are supervised on a regular schedule by a teacher-coordinator. Accurate records are kept on the progress of each student. Placement and continuation in the job has been very satisfactory. An advisory committee works very closely with the school authorities in dealing with such items as course content, equipment purchase, child labor laws, and other related matters.

Adult courses in ornamental horticulture and related fields are taught by all of the instructors at the farm at varying times to interested people in the industry.

FFA Activities

All students enrolled in the agriculture program take part in FFA activities. In 1967-68, eleven students received the State Farmer degree. This is indicative of the effectiveness of the program. The Dade County Youth Fair is a significant indication of student interest in leadership activities and the agriculture program is well represented by students who exhibit ornamentals, poultry, steers, livestock, and other products.

Special Programs

Another school of interest in the Miami area is the Douglas MacArthur High School. The school enrolls over 450 students who have special needs. All are of average intelligence but for different reasons have been unsuccessful in the regular high school program. They are referred to Douglas MacArthur and placed in specialized classes. Each student has the opportunity to receive occupational type courses.

There are two agriculture teachers in the school with a total of 115 students. These students are given instruction and a variety of practical experience in agriculture. Their laboratory provides activities in ornamental horticulture, beef production, poultry production, and farm mechanics. Many students return to their home schools after spending different periods of time in Douglas MacArthur. However, some students prefer to remain and graduate from Douglas MacArthur High School. Agriculture students at the school have a complete FFA program and each is required to have a supervised experience program.

Another special instructional program in agriculture is conducted at the Silver Oaks School. Students attending this school have been assigned by the Miami Juvenile Court to the Kendall Children's Home. Two instructor teams teach agriculture to students in grades eight through twelve at the Silver Oaks School. The course of instruction is concerned primarily with the learning of occupational skills as offered in the vocational agriculture program throughout the country. The students produce vegetables and a variety of ornamental plants as well of raise livestock. Over the years the vocational agriculture program in Silver Oaks School has made a significant contribution to the successful rehabilitation of a number of students attending the school.

Students grow and market ornamental plants at the Miami School Farm.

Administration of the Program

The program of vocational agriculture in Greater Miami is under the supervision and administration of the District Superintendent for Vocational, Technical, and Adult Education of the Dade County Public Schools. The program of vocational agriculture is under the direct supervision of the Director of High School Vocational-Technical Education. The administration of the program requires close coordination with all school officials. Principals in the schools are appraised of the activities in the vocational agriculture program and have shown an increasing interest in the program. There are twelve teachers of agriculture in the Dade County Public Schools in 1968-69.

The instructional program in agriculture is of high quality. New programs and new approaches are tested continually. The program of agricultural education in Miami is an indication of the need to seek out persons who have an interest in agriculture and to provide instructional programs that prepare them for entry into agricultural occupations.

New York City

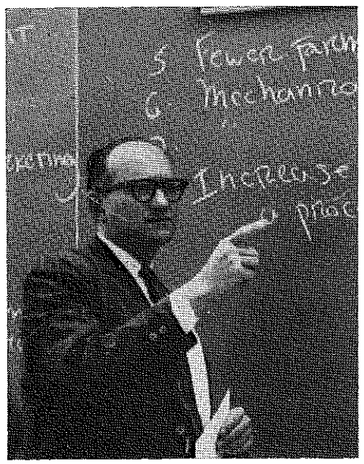
Agricultural Education in New York City

GEORGE CHREIN
Chairman, Agriculture Department
John Bowne High School
Flushing, New York

How do you structure a meaningful agricultural education program in an academic high school in New York City? The program at John Bowne High School started officially in 1917. This article describes the program as it operates today.

SELECTION OF STUDENTS

Students from all boroughs of the city apply for and enroll in the program. Prospective students and their parents are interviewed by the chairman of the agriculture department prior to enrollment. Selection is based on the following criteria: a sincere interest in agriculture indicated by prevocational experiences, school and community activities, and related reading; academic potential indicated by test scores, grades, and recommendations of teachers; character ratings; and health records to insure that students can complete the occupational experience programs required each summer.



George Chrein, the author of this article, instructs a class in agricultural business management.

Approximately 45 students are admitted each year. Twelve to fifteen students in each entering class are girls. Our total enrollment at the present time is 120 students. Few of the entering students have first-hand experiences in the production of crops or animals. About 15 per cent of the entering students have parents, relatives, or friends who either come from farms or are now engaged in off-farm agricultural occupations.

Fifteen to twenty of the entering students indicate veterinary medicine as their first choice career objective. The other students indicate a variety of agricultural interests ranging from research in plant and animal sciences to food technology. All students at the time of entering plan for agricultural careers on the professional level, hence they intend to attend colleges of agriculture upon graduation from high school.

FACILITIES

We have a land laboratory of approximately four acres within a two-minute walk from the school. Facilities at the land laboratory include a laying house with a poultry flock, a brooder house, land areas for fruit and vegetable crops, a nursery for landscape materials, a practice area for landscape design, three tractors and related equipment, garden tractors, and garden tools.

In the high school building we have a 2,000 sq. ft. agricultural mechanics shop, a classroom, and an office including a comprehensive reference library with instructional materials. A section of the school library is devoted to current agricultural magazines and includes a file containing several hundred agricultural career bulletins and pamphlets.

STAFF

The staff includes three teachers, including the chairman, and one land laboratory assistant. Each teacher has a master's degree or the equivalent. Each teacher is assigned one of the following instructional areas: agricultural mechanics, crop and animal production or agricultural business and farm management. The land laboratory assistant is responsible for the maintenance and care of all livestock and equipment and for having instructional tools and equipment ready for classes meeting at the land laboratory.

INSTRUCTIONAL PROGRAM

The instructional program is designed to accomplish the following objectives:

— To provide opportunities for boys and girls from all parts of New York City to develop an understanding of the educational and occupational opportunities in agriculture and to provide information about the nature of the occupations and the qualifications needed for entrance.

— To guide students in making realistic educational and vocational objectives and in making plans for attaining these objectives.

— To provide opportunities for students to develop a program of experiences in preparation for entrance to an agricultural college and/or advancement in an agricultural occupation.

— To develop understandings, appreciations, and basic competencies in the science of crops, livestock, soils, mechanics, and agricultural business management.

To describe the instructional program, let us follow an entering class as they proceed through the three-year program.

Students cultivate nursery crops as a part of the instructional program.

The First Summer

We first meet entering students as a group during the summer immediately following the completion of the ninth grade. Entering students are required to spend their first full summer on the land laboratory. Forty per cent of each summer school day is devoted to class instruction and the remainder to practical work experience on the land laboratory. Much of the formal instruction is devoted to orientation and guidance.

Students receive instruction in the safe operation of tractors and other equipment. Instruction is provided also in conservation, soils, poultry production, nursery and fruit crops, establishing and maintaining lawns, the FFA, and parliamentary procedure.

Each student is assigned a garden plot of approximately 400 sq. ft. Here, for the first time in most cases, an opportunity is provided to plan, plant, and harvest vegetable crops. Each student receives instruction relating to the production of vegetable crops. Students are assigned tasks on a rotating basis so that by the end of the summer each will have performed tasks associated with the production of poultry and the production of fruit, vegetable, and nursery crops.

In the tenth, eleventh, and twelfth grades students are involved with "in-depth" instruction in agriculture. They meet for instruction in agriculture for approximately 90 minutes each day. One-half of the total instructional time is devoted to agricultural mechanics.

Grade 10

Students receive instruction in selected basic units in poultry, floriculture, ornamental horticulture, forestry and vegetable crops. The land laboratory is used as a common base for motivation and experience. Instruction in agricultural mechanics is based upon the study of tractors and engines, farm machinery, wood and metal working skills, and welding and construction.

In the spring, a unit on "Planning for My Summer Occupational Experience Program" is taught. During the second summer most boys and girls are assigned to farm jobs in New York State. Others are assigned to jobs in veterinary hospitals, botanical gardens, nurseries, garden centers, and other off-farm agricultural occupations. Students are required to maintain carefully prepared records and diaries. Visits are made by the teachers in the department to evaluate the progress of students and to suggest ways and means of broadening the students' experiences in accordance with their needs and interests.

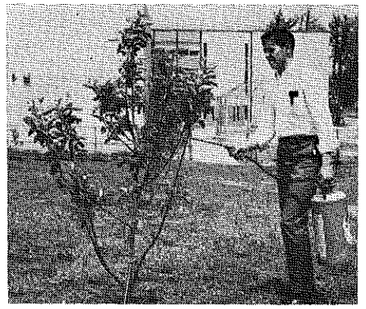
Grade 11

During the second year of the instructional program, instruction in agricultural mechanics provides students advanced units in the principles of the internal combustion engine, trouble shooting, electricity and electric motors, and advanced farm machinery repair and construction. During the remaining one-half of the time students study dairy science, fruit production, land use and conservation, and field crops. Placement for the third summer of required occupational experience is carefully planned with each student based upon newly acquired outlooks and changing goals.

Grade 12

During the senior year, instruction in agricultural mechanics is devoted to advanced areas of machinery and equipment, welding, metal work, and farm buildings and structures. The remaining instructional time is devoted to agricultural and farm business management including record keeping, business analysis, taxation, credit, insurance, and cooperative business organizations.

Students are required to pass a three-hour comprehensive examination in agriculture before a diploma is issued indicating a specialization in agriculture. Many of the graduating seniors, with the help of the department, are placed for a fourth summer of occupational experience even though it is not required.



Students enrolled in agriculture at John Bowne High School receive practical experience related to the program of instruction.

Concurrent with the double period of agriculture each day, students are scheduled for four single periods of regular academic subjects. By the end of their senior year, students will typically have completed at least two years of a foreign language, the required English, two and one-half years of social studies, three years of mathematics, and at least three years of science including biology, chemistry, and physics.

We experience an attrition rate of approximately 20 per cent over the three-year period. Some students leave the program because they change career goals, others leave because they fail to meet course requirements, and others leave because their families move to new locations. At least 90 per cent of the graduates are accepted in two-year and four-year colleges of agriculture.

STUDENT ORGANIZATIONS

Each student entering the agricultural education program at John Bowne High School is expected to join one of the three student organizations —the FFA Chapter, Filii Terrae (Agricultural Honor Society), or the Agricultural Mechanics Club. To raise money for field trips, our FFA Chapter sells house plants to students and faculty. Committees of members study and prepare publications concerning the cultural requirements for the plants sold. The Agricultural Honor Society

(Continued on next page)

ADJUSTING PROGRAMS TO URBAN AREAS

FRED H. CORNABY
Teacher of Agriculture
Provo, Utah

After fifteen years of agricultural instruction at Provo High School, one realizes that numerous changes must be made. A gradual decline in agricultural facilities and interests has come about as more of our good land is absorbed into homes and lots for an expanding urban population. Urban neighbors dislike lowing cattle and bawling calves in their back yards. Even riding horses are not pleasing to neighbors over the fence. Even the friendly dog must be kept on a leash.

The scale of farming has reached such massive proportions that the machinery on the farm can equal the value of the land. The livestock needed for an economical unit could be as valuable as the land or the machinery. All these changes aren't lessening the importance of agriculture, but they are providing fewer opportunities for school-age children to participate in farming experiences.

Dad is usually fully engaged in making the living while mother is caring for the family needs or sometimes helping with the family income. Who is responsible for the improvement of the home grounds? In some cases, no one is. With few job opportunities available for teenage boys, a need exists around every home for someone to beautify the city lots and in some instances grow a vegetable garden for the family members. The creation of this need provides an excellent opportunity for the program of vocational agriculture to flourish in city schools.

Instruction for Home Improvement

Here I am in an urban area of 40,000 population with agricultural opportunities shrinking each day but with a need for outside home improvement and civic pride increasing every day. Few students that register for agriculture at Provo High School are from homes where 100 hours of outside improvement couldn't be made. Painting, patio construction, fence building, lawn planting, shubbery pruning and fertilizing, and shade tree selection and planting are but a few of the jobs that need to be done.

Yes, we are going to work with the boy with opportunities on the farm, but we should also provide guidance to the city boy who desires the leadership opportunities of vocational agriculture and the chance to do something with his spare time that will bring joy and comfort to the family.

Laboratory Experience

Two acres of agricultural laboratory provides the training facilities near the school which can assist many students with ways and means of home yard improvements. A new greenhouse provides the opportunity to extend the season in the fall and to begin it earlier in the spring. A variety of hand and power machinery tools provide operational experience which helps a boy to say, "Yes, I've done it, Mr. Employer."

One of the growing opportunities is the need for those who know how to select, arrange, plant, prune, and fertilize plants to beautify homes, businesses, public parks, and highways. One of the primary objectives of our program at Provo High School is to try to create a strong desire in students to become interested and proficient in this new field.

The Challenge

The opportunity is there. To those who accept the challenge, a new way of life is possible. No opportunity will bring more pleasure and self-satisfaction than the creation of beauty for themselves and others from the use of plant materials.

Agricultural Education in New York City

(Continued from page 93)

arranges for field trips and for invited speakers. Members in the Agricultural Mechanics Club conduct a variety of experiences in helping repair and maintain the land laboratory equipment.

FOLLOW-UP OF GRADUATES

We maintain an alumni file. Contact in most cases is made during the first year after graduation. Beyond that a record is kept of alumni visits and correspondence. Perhaps the most satisfying experiences are to follow the progress of alumni. We have numerous former students established as veterinary practitioners, professors of veterinary medicine, agricultural journalists, conservationists, foresters, cooperative extension agents, teachers of agriculture in high school and college, agricultural engineers, and food technologists.

AGRICULTURAL EDUCATION IN CITY SCHOOLS

John Bowne High School is not the only high school in New York City offering agricultural instruction. We are the largest, oldest, and only high school offering the type of program described in this article. Another high school offers a two-year program in ornamental horticulture with all occupational experience obtained in the New York Botanical Gardens. Another high school offers a one-year program in floristry and flower shop management. A new program has just been started in one school which provides instruction in small laboratory animal care. We are considering the addition of a three-year specialized course in ornamental horticulture to our program at John Bowne High School.

Agricultural education has a place in large city schools. The full potential has hardly been reached in terms of programs for elementary and junior high school students, students with special needs, and adults interested in gardening programs. The greatest service we can render to students is to sustain, nourish, and enrich their interests in agriculture and guide them toward successful and satisfying careers.

A Cooperative Program Involving Vocational Education and Elementary Education

AVERY GRAY, Supervision
Indiana Department of Public Instruction
and
JEWETT WHITE, Vocational Coordinator
Gary, Indiana

What happens when vocational education programs and elementary education programs are merged? We will have some answers when a cooperative venture involving an Elementary and Secondary Education Act Title III enrichment program in elementary education and a horticulture program in an area vocational school begin full operation in Gary, Indiana. Gary is located in one of Indiana's most metropolitan counties.

Elementary Education

The Title III program is an outdoor educational venture for elementary children in the Gary Community Schools. The basic purpose of the program is to enrich the educational experience of urban youngsters, many of whom have not had the opportunity to venture beyond the limits of the inner city environment. At the Deep River Outdoor Educational Center several acres of woods and prairie, a greenhouse, self-contained classrooms, and a lake serve as a laboratory. A study of soil, plants, wildlife and the natural environment of the great outdoors is a stimulating adventure for the urban students.

A class of elementary school students visits the Deep River Outdoor Educational Center in Gary, Indiana.

Vocational Education

Simultaneously an area vocational school (the Gary Career School) is developing a vocational horticulture program for training potential employees for the landscape service occupations. Much of the practical experience in the horticulture program as well as greenhouse propagation and management, individual growing plots, nursery, and grounds maintenance activities will be carried on at the Deep River Outdoor Educational Center. Thus a cooperative use of facilities, equipment, and the land laboratory space will directly benefit the two programs.

Some Benefits

Some fringe benefits may develop. Some of the students enrolled in the vocational horticulture program will have the opportunity to work with elementary students who visit the Deep River Center. As a result, they may develop an interest in teaching as well as in horticulture. It is anticipated that a deep appreciation and a lasting concern for natural beauty, the growth of plants, and the stimulation of interest in horticulture and its many diverse occupational clusters will be developed in the elementary students exposed to this program at Gary.

Jewett White (left), Vocational Coordinator for the Schools in Gary, Indiana, and Homer Edwards, Vocational-Technical Program Officer, Region V, U. S. Office of Education, inspect flowers started in the greenhouse at the Outdoor Educational Center.

This innovative program including vocational education in agriculture and elementary education is being watched closely in Indiana and in many neighboring urban centers. Such an "innovative mix" may provide interesting answers concerning contact with vocational education by elementary school students.

Instruction in Agriculture for Elementary School Students

ROBERT D. HERR, Teacher of Agriculture
New Holland, Pennsylvania

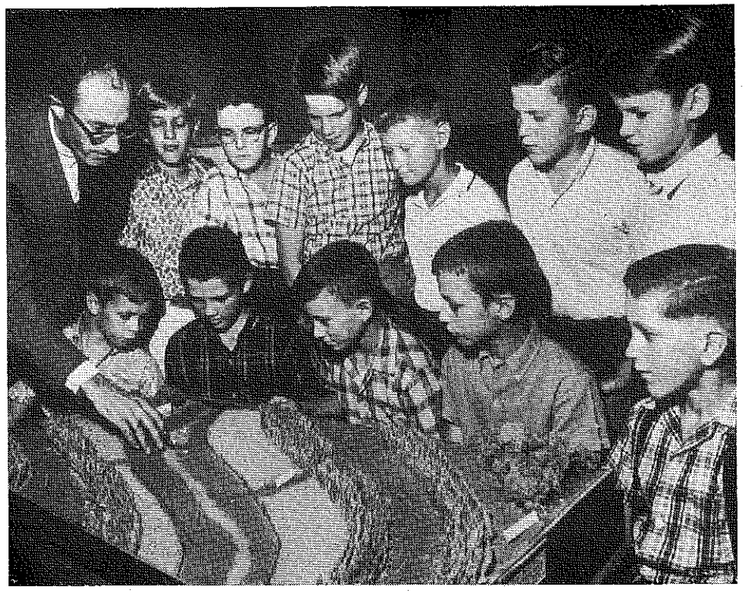
There are many things in the world today that have changed immensely in the past ten to twenty years. Most of these changes are for the good but there are still a few things that do not change easily. One of the most difficult things to change is our habits. Once acquired, a habit is with us for a long, long time.

Most of our habits are formed when we are quite young—perhaps our habits of neatness, industry, thrift, and safety. By the time a boy reaches a ninth-grade class in vocational agriculture he has learned a great many things. He has been mowing the grass at home for four or five years and he has probably driven the tractor for that long also. He has been using a BB gun or even a rifle. He sees barnyard runoff drain into the family water system, watches dirty water rush off the hill leaving a ditch. Many of his habits are well formed before he enrolls in a ninth-grade course in vocational agriculture.

A Pilot Program

In our area of Lancaster County, Pennsylvania, many farm students never get to the ninth grade. So the need for a junior program in agriculture seemed necessary. In a pilot program set up in the Eastern Lancaster County Schools, agriculture is taught in the elementary schools. Initially the course is being taught in all but two of the sixth grade classes of the schools of the district. It is also being taught in one Mennonite parochial school and in two schools made up primarily of Mennonite and Amish students in the seventh and eighth grades.

Three basic areas of need were defined—safety, sanitation, and conservation. The curriculum is built around these areas. In these grades boys are beginning to use power equipment and tools and can be more easily impressed with the need for safety and the correct use of tools and equipment. Most children are interested in the out-of-doors and conservation has a great deal of appeal. Hunting safety is of interest to these students also. They are willing to carry home the ideas presented and do so with excitement and enthusiasm.



Robert D. Herr, the author of this article, teaches a unit on conservation to sixth grade students. Conservation education in soil, water, and wildlife is included in the elementary agriculture program in Lancaster County.

Elementary Agriculture Program

The elementary agriculture program is being presented to 350 students including classes in elementary schools and club programs to seventh- and eighth-grade students in the junior high school. Each group meets for one hour per week. Attendance is voluntary and an effort is made to limit the groups to twenty students. Projects are encouraged and record books are provided for the projects. A home visitation program is carried out on a regular schedule.

It cannot be stated too strongly that this is the time when boys are learning to do a lot of work around their homes and farms. They are forming the habits they will use throughout their entire lives when they begin to use power mowers, tractors, and other power-driven equipment. They have not learned the wrong way—yet. They are tremendously enthusiastic and excited about this type of program.

We try to teach them about the local, state, and federal agencies that provide assistance and advice to farmers and other rural landowners. The need for conservation and sanitation will become more urgent as time goes on and these young men are going to become the adults who will have to solve the conservation and sanitation problems we are building up today. If we can help to make them aware of these needs, then half the battle will be done.

Instructional Materials

One of the biggest difficulties the teacher finds in implementing a program of this type is adapting instructional materials to the sixth-grade level. There are few instructional materials for teaching elementary agriculture. It comes as a real jolt for the teacher to discover that his sixth graders simply don't understand his ninth and tenth grade language.

Are you tired of reading about farm accidents among the junior citizens of your area? Could you use about three hundred interested and excited students hanging on to your every word? Would you like to take 300 sixth graders to the Pennsylvania Farm Show at Harrisburg? Try an elementary agriculture program! It keeps you young and provides an amazing number of challenges to the teacher willing to give it a try.

Content Versus Process in the Classroom

H. H. GOLDEN, Teacher of Agriculture
Louisa, Virginia

H. H. Golden

Teachers usually agree that there is a problem in bringing about a satisfactory balance between content and process in the classroom. Student teachers face a real challenge when they try to balance the two. Some older teachers have never overcome this barrier to good teaching. Some teachers feel that the presentation of a great deal of subject-matter overrides the importance of the process that is used in presenting it. On the other hand, some teachers place great emphasis on teaching techniques in the classroom and are not too concerned about the quality or quantity of content. But there should be a working balance both in the mind of the teacher and in actual teaching practice.

A Philosophy of Teaching

Most teachers have a philosophy about the subjects they teach and know the philosophy of the school. These philosophies should be considered in arriving at both the process and content to be employed in the classroom. Even though philosophies may change from year to year, basic ideas about what good teaching is should be kept by all teachers.

Teachers should know and prepare much more than they will teach in a lesson. Each student should be considered so that every student can be reached. Even after the teacher prepares the lesson plan, it is important for him to be on the lookout for progress that is made in relation to what is planned and what is actually taught.

The Proper Balance

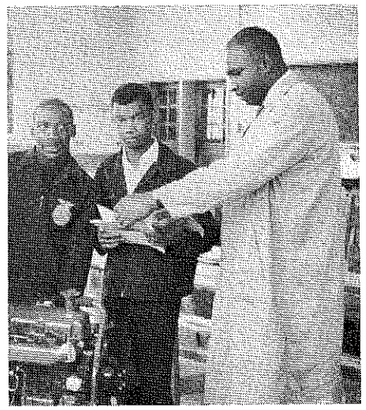
There is always the problem in planing for teaching in bringing about a satisfactory balance between structure (organization), content (subject matter), and process (methods, techniques, or procedures). The teacher is the key in bringing about the balance. What goes on in the classroom decides the balance. Better teachers tend to ask the students questions to get information with the results that students answer questions they never knew they could.

Average teachers spend most of their time lecturing. Better teachers display a helpful attitude toward students and often will ask students if they are ready for the next assignment rather than always giving all of the directions and all of the information. Better teachers actually only lecture about 15 per cent of the time. The balance of the time is used for employing many different teaching techniques. All of these considerations should be made in lesson planning.

Learning and Experience

Teachers must remember that learning proceeds best when the learning is related to the experiences of the learner. Learning is changing one's potential for seeing, feeling, doing, and thinking through experiences which are partly perceptual, emotional, motor, or intellectual. Teachers need an understanding of human growth and development, the needs and interests of students, and some idea of the potential of the members of the class.

We should all remember that average teachers teach books, good teachers teach ideas, but superior teachers teach children.



Students in an agricultural mechanics course receive instruction on the operating principles of a diesel engine from H. H. Golden, Teacher of Agriculture at A. G. Richardson High School. Mr. Golden received the Honorary American Farmer Degree at the National FFA Convention in October 1967.

BOOK REVIEWS

FARM TRACTOR TUNE-UP AND SERVICE GUIDE, revised by W. H. Parady and George Smith. Athens, Georgia: American Association for Agricultural Engineering and Vocational Agriculture, 1968, 22 pp., $3.40.

The manual contains the manufacturer's tune-up specifications for tractors built since 1949 and includes the models being built in 1968. The publication is about 25 per cent larger than the one issued in 1964. Specifications and recommendations are given for the tractors produced by the following companies: Allis-Chalmers, J. I. Case, John Deere, Ford, International Harvester and Farmall, Massey-Ferguson, Minneapolis - Moline, Oliver, David Brown, and New Idea Uni-System.

This manual should prove to be a very valuable reference for those who are engaged in tractor repair and should be a part of the shop library where tractor work is taught and carried out. This would include home libraries of farmers and ranchers, students, and tractor mechanics and libraries of high schools, junior colleges, and universities.

The authors who originally collected and compiled the data, as well as those who revised and brought the data up to date for this publication, are staff members of the American Association for Agricultural Engineering and Vocational Agriculture.

Leo P. Herndon
University of Nevada

THE WELDING ENCYCLOPEDIA by Ted B. Jefferson. Morton Grove, Illinois: Monticello Books, 1968. 1,067 pp. $10.00.

Part I has the subject matter organized in an alphabetical listing. The ability of the user to locate subject matter by this listing method is dependent upon his knowledge of welding terminology. A wide span of subject matter has been covered and the depth of knowledge is adequate.

Part II includes the appendices and has data not normally found in a text; for example, comparable products by trade names, specifications of filler metals, alloying elements, steel specifications, and prequalified weld joints in addition to normal weights, measures, and conversion contacts.

Part III lists alphabetically the trade names found in the metal fabrication industry. The listing explains the names which describe products, accessories, companies, and location of the companies. This data would not be available unless a person had current educational and sales literature from all companies.

Part IV is the Welding Industry Buyer's Manual section. Fifteen manufacturers of welding equipment and supplies are listed. The incompleteness of this listing detracts from this section because many companies and firms are not represented. Part V is the index for the book.

The purpose of the author in preparing the book was to provide a quick reference for basic data and current welding practices. Experience gained by Jefferson as publisher of the *Welding Engineer Magazine* has placed him in a favorable position to edit this book.

The book would be recommended as a reference for colleges and universities and could serve as a supplement text for trade and vocational schools. Use of the book as a text in high school would depend upon the type of program offered.

A *Study Guide and Workbook* is available for $3.50. It has 24 lessons each for arc welding and oxyacetylene welding. Each lesson follows an outline which includes theory, shop work to be completed, reference reading, and a listing of questions related to the lesson. A true and false test is included for each lesson and unit. The study guide does not lead the teacher by the hand but provides direction and guidance.

W. Forrest Bear
University of Minnesota

OFF-FARM AGRICULTURAL OCCUPATIONS MATERIALS AVAILABLE

The Center for Vocational and Technical Education at The Ohio State University has available curricular and program development materials in off-farm agricultural occupations. These materials will not be reprinted at this time. The materials are very appropriate for use in the off-farm agricultural occupations areas. The publications are of two types: materials pertaining to program development, occupational experience programs, occupational guidance, and a summarization of research findings; and course outlines and modules for teacher use, which are distributed as packaged sets.

	Cost
Review and Synthesis of Research in Agricultural Education	$1.50
Policy and Administrative Decisions in Introducing Vocational and Technical Education in Agriculture for Off-Farm Occupations	.75
Vocational and Technical Education in Agriculture for Off-Farm Occupations	.75
Summary of Research Findings in Off-Farm Agriculture Occupations	1.00
Planning and Conducting Cooperative Occupational Experience in Off-Farm Agriculture	1.35
Occupational Guidance for Off-Farm Agriculture	.60
Horticulture—Service Occupations (Course outline and twelve modules)	7.25
Agricultural Supply—Sales and Services Occupations (Course outline and twelve modules)	7.00
Agricultural Machinery—Service Occupations (Course outline and sixteen modules)	7.50
Agricultural Chemicals Technology (Course outline and eight modules)	6.75

Orders should be submitted to:

The Center for Vocational and Technical Education
Ohio State University
980 Kinnear Road
Columbus, Ohio 43212

VOCATIONAL AGRICULTURE FOR CITY BOYS

ROBERT H. HARGRAVE, Teacher of Agriculture
Gainesville, Florida

"Rural boys should take agriculture, city boys should not." This type of planning by adults is evident in many school systems today. Many rural boys can take agriculture, most city boys cannot.

Yet, both groups of boys are reading career articles such as the following from a daily paper: "Agriculture is a super growth industry with so many exciting careers you wouldn't believe it. No, you don't have to have grown up on a farm to get into it." A recent national farm implement magazine stated, "There are more than 23 million job opportunities in American agriculture today. Across the country many young people, born and raised in the city, are taking up farming as a career and business." But most city boys have no opportunity to take vocational agriculture.

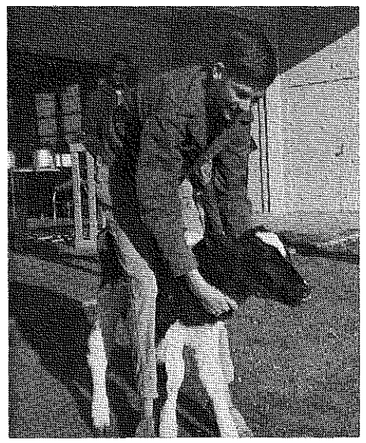
A Program for City Boys

Howard Bishop Junior High School in Gainesville, Florida, provides an agricultural education program for city boys. City and rural boys in that school of 1,400 pupils are introduced to the broad field of agriculture. Facilities of the vocational agriculture department consists of a classroom, shop, a storage and work area, and a land laboratory plot. Student experiences are based upon a vocational agriculture curriculum guide which was developed by local teachers from the Florida teaching program for vocational agriculture. In this curriculum guide the teachers have envisioned the junior high school years as years of exploration, searching, and enrichment. Agriculture, including the broad field of agribusiness, should be one of the major fields of exploration during this time in a boy's life.

(Right)
Turnips and boys thrive on the land laboratory plot at Howard Bishop Junior High School.

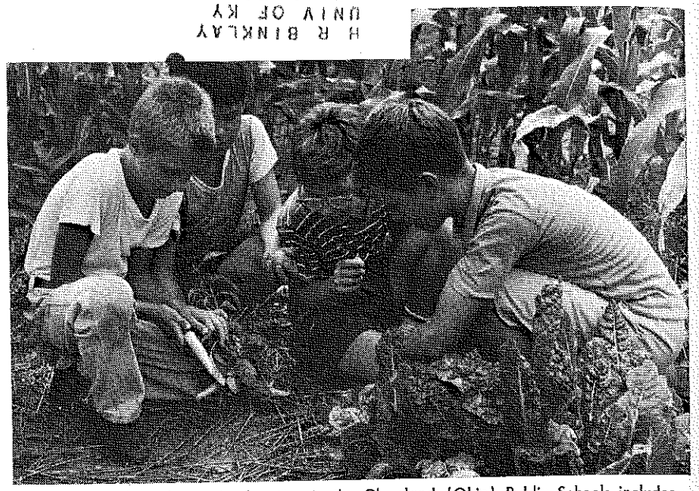
(Above)
Robert Hargrave, Teacher of Agriculture at Howard Bishop Junior High School, instructs students in a unit on poultry production.

(Right)
Students enrolled in agriculture at Howard Bishop Junior High School receive instruction on how to raise a dairy calf.

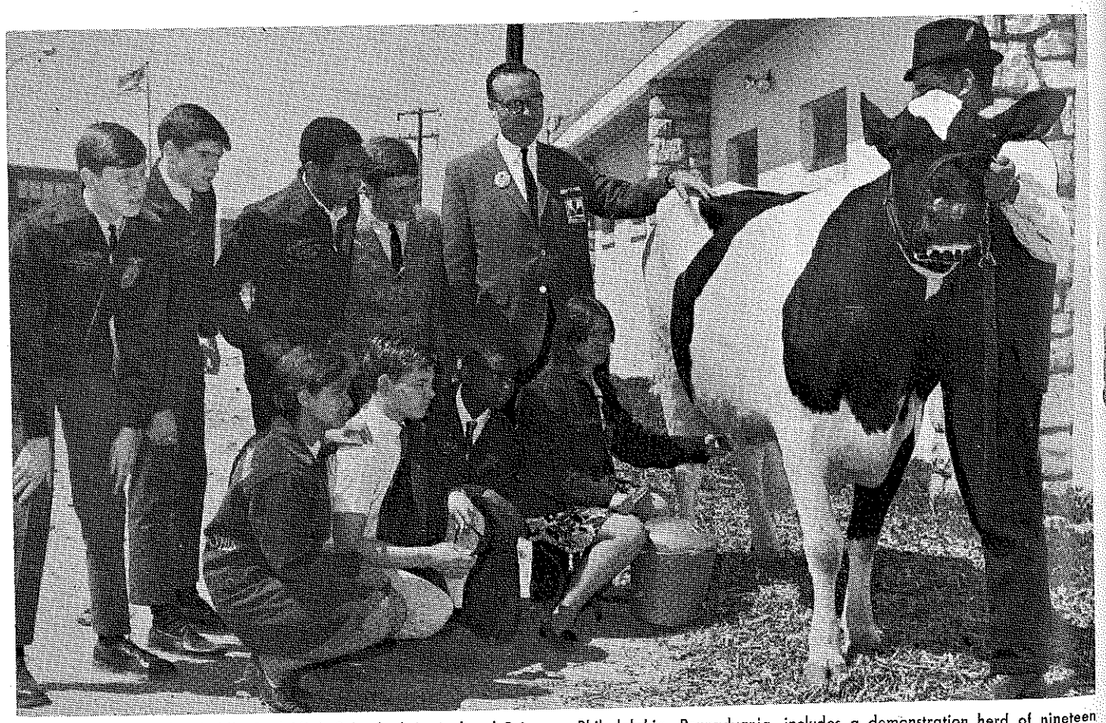


Stories in Pictures

GILBERT S. GUILER
Ohio State University



The program of horticultural education in the Cleveland (Ohio) Public Schools includes a school gardening program for elementary school students. These students are harvesting produce from their tract garden.



The farm at the Walter Biddle Saul High School of Agricultural Sciences, Philadelphia, Pennsylvania, includes a demonstration herd of nineteen registered Holstein cows. Robert Harbison (hand resting on cow), Vice President of Harbison's Dairy, presents a registered Holstein cow to the school.

AGRICULTURAL EDUCATION

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Featuring —

SUPERVISION IN AGRICULTURAL EDUCATION