Stories in Pictures

GILBERT S. GUILER
Ohio State University

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

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 G. Snapp, Michigan State University)

Featuring—
AGRICULTURAL EDUCATION IN CITY SCHOOLS
Agricultural Education in City Schools

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 educators throughout the nation 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.

Recently, 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 Amendment, the city school administrators are enthused with the results, especially those programs in the area of ornamental horticulture.

Experience with agricultural programs in 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)

Guest Editorial . . .

A Teacher's View: Girls in the FFA

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 1960 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 within the nation's most vital industry—agriculture. Never before have our guidance been so needed and so critical. All of you know that most of the time we can now see the need to make almost any decision take place that we desire. The agricultural situation is certainly no different than some particular activates of 1968, it appears likely that funds will be forthcoming to activate a real movement in establishing vocational education in agriculture to strengthen 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 city's 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.

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Guest Editorial . . .

Girls in the FFA

by 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 bringing 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 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 boys president 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.
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 1951. Vocational horticulture programs were initiated in 1962, and in 1963 a part-time high school technical program in horticulture was begun. Approximately 20 per cent of the students were girls. An enrollment of more than 375 is projected for 1965-66.

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 the field of horticulture, agricultural, 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 commercial greenhouse and 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 agriculture in the state of Ohio. This information clearly indicates the need for and importance of vocational horticulture programs in Cleveland.

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 part-time vocational horticulture instruction in the high schools made it relatively easy to establish the state-side 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, general horticulture, and produce merchandising.

Horticulturist I may be taken as a science elective in the tenth grade. Emphasis in this 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 in club activities.
time jobs in horticulture industries during the summer. Students enrolled in Horticulture II and III in 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 horticulture industries during the months of summer. 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 a week and in school the other half day. The students receive related instruction at school which includes discussion of problems related to the job, management practices, and sales techniques. During the winter months when there are no greenhouse facilities for placement in some horticulture industries, students are engaged in classroom, lecture, 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 occupation-oriented programs are the development of desirable social habits, manipulative skills, and improved character. Through these programs a number of job opportunities have been re-created in school and graduated.

Students in the horticulture program at Thomas tw., Edinburg High School obtain released time during the spring and fall to go out into nearby communities to perform maintenance services. These activities are under the supervision of the vocational horticulture teachers. Students are placed in surrounding schools under work-study programs with custodians or as gardeners and landscape maintenance services. These activities are under the supervision of the vocational horticulture teachers. Students are placed in surrounding schools under work-study programs with custodians or as gardeners. These students perform landscape services for the school. Each student is paid a part-time salary, which 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 landscape design, planting, and maintenance of the school grounds. These students are taught the principles of greenhouse management and practice that is not possible in the feeder schools. The city of Cleveland and the State Department of Education are initiating another area skill center this fall. The new class will be three hours in school and the post-high school technical program.

A greenhouse superintendant is employed full-time to manage the greenhouse at each of the area skill centers. The greenhouse superintendant plans a management program with the horticulture instructors who 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
Pre-vocational courses are offered in the vocational horticulture 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 voca-
ional horticulture the following year or semester.

Youth Organizations
Youth organizations are encouraged in both the vocational and home horticulture programs. FFA chapters have been started in several of the schools. With chapters in nine states, the FFA has been adapted to urban vocational horticulture programs. The FFA chapters in Cleveland are called Fulton Agriculturalists or Hort Club. The West Texas High School FFA, winner of several state and national contests, had one member who received the State Farmer Degree in 1967-68. The University of the State of New York Horticultural Award Winner in 1967-68. Changes in the State FFA Association made the purpose that the girls and the addition of horticulture contests and awards have made FFA more attractive to urban youth.

In-service education conferences conducted by the state superintendent and other education officials, as well as guidance from the local super-

THE AGRICULTURAL EDUCATION MAGAZINE

OCTOBER, 1964
A Comprehensive Program of Agricultural Education in Los Angeles

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

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 the Los Angeles school system. Each week these students receive one hour of classroom instruction and four hours of laboratory activities. These classroom and laboratory activities include instruction in wildlife and environmental science, agricultural science, and meat science. The junior high school program is designed to attract academically inclined students. It is 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 greenhouse and lift-house are also utilized for plant growing experiments. A survey conducted in 1968 of students who had completed this one-year course at three of our high schools revealed that 63 percent were continuing their education in four-year colleges in the agricultural sciences. Five additional high schools are now offering this program.

High School Programs
The high school program is more diversified and intensive. Courses are provided for academic, vocational, and general students.

Plant and Soil Science is a one-year laboratory course which was accredited in Los Angeles Unified School District in 1967. The course is designed to attract academically inclined students. It is in addition to regular classroom instruction which involves demonstrations and experiments, actual implementation of scientific principles and how they relate to plant growth. The course is designed to attract academically inclined students. It is in addition to regular classroom instruction which involves demonstrations and experiments, actual implementation of scientific principles and how they relate to plant growth.
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 school authorities have convinced the instructional 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 three-year agricultural education in the school. This effort led to the founding of the Walter Biddle Saul High School of Agriculture Sciences in the city. 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 1946-47 will exceed 600 students. Approximately 100 of these students are girls. Ten teachers of agriculture will be in charge of the school. The teachers are under the supervision of the Agricultural Program Coordinator. The program coordinator, together with the principal, 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 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 freshmen year, the seven-week courses are in careers and occupations, animal science, conservation, crop production, and the meat industry.

The ten-week course at the high school level includes 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 meeting 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 programs. Both boys and girls from all areas of the city apply for admission.

Facilities

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

Eighty-four acres of farm land offer the teachers considerable opportunity for demonstrations and instruction in animal and crop production with modern agricultural machinery. The school has a full-time meat cutter, one 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 turfgrass plot, equipped with a yoke rake, a pull blade, and a pull blade, a variety of mowers, tillers, cultivators, seeders, mowers, plows, and seeder machines. The horticultural instructor has a complete greenhouse equipped with a 200-foot raised bed, 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 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 students 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 students enjoy their usual high school activities have to be sacrificed. There is not sufficient time for inter-school 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 agriculture or 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 high school diploma 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, regional, and state FFA activities, two additional contests are conducted each year: a Horticulture Contest sponsored by the chapters of the North California Association of Nurserymen, and a Los Angeles Beautiful Planting Contest sponsored by the Soo-Reboek Foundation, Women's Architectural League, and Los Angeles Beautiful Foundation. All FFA activities 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. We in agricultural education have a major responsibility for providing information to a broad segment of students concerning the importance of agriculture to our economy, the need for an increased supply of capable men and women to fill positions in the agricultural field.
A LOOK AT AGRICULTURAL EDUCATION IN BOSTON
— The First Fifty Years

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

The year 1963 marks the fiftieth anniversary of agricultural education in Boston. In September 1913, the Boston School Committee established a state-sponsored instructional program in agriculture, so that students who had interests in agriculture and horticulture could continue their 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 on Boston’s residential area, and the commercial agricultural and horticultural enterprises that flourished on the fringe 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 agriculture. Students in the horticultural division major in either floriculture or landscape gardening. Conservation is also taught in the horticultural division as 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 college, university, or other type of post-high school institution. Students spend 50 percent of their time studying agriculture or horticulture. The other 50 percent 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 to Grade 10. Applicants are expected to show an interest in the various courses by previous experience in school or home gardening, or by participation in work on farms, or work in horticultural businesses. We recommend that students get experience in one of these areas 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.

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 summer experience may vary from two to three days to two or three weeks. Often as many as 50 percent 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. The length of a three-week vacation for local students begins in the fall; however, many students remain on the job until school opens. If students are in good academic standing, have a satisfactory record of employment, and have the consent of their parents, they may be permitted 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 to those preparing for future study in two-year or four-year colleges.

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During the summer occupational experience period, the student is visited every two weeks by a teacher from the high school. A lesson is taught which could ever 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 studies. Graduates of the program have entered the various fields of agriculture and horticulture.

Many of the graduates hold excellent positions. Positions held by graduates include the agricultural and horticultural programs include president of the American Botanical Society, professor of a state university, university

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 has been the result of the Boston School Committee in 1918 when it was selected to provide the courses because of its proximity to Arnold Arboretum and Franklin Park, the large estates on Boston's residential area, and the commercial agricultural and horticultural enterprises that flourished on the fringe of the city.
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 schools 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 and greenhouse products and services. There are many ornamental nurseries in Miami as well as numerous farms, landscape, and maintenance organizations and companies that supply stores.

The needs of people who desire to enter into the related agricultural industries in this area and those who desire traditional 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 Farms

The oldest and best known program in vocational agriculture in the city is located at the Miami School Farms in North Miami. The present site is part of an eighty-acre tract which was deeded to the Board of Education in 192. 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 four rooms, 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 School Farms is staffed with five teachers of agriculture. A full-time secretary-bookkeeper is employed as well as a man for the maintenance of facilities.

Present facilities include two permanent classrooms and two portable classroom rooms, an office, a shop and storage shed, washroom, a nursery work area, ten poultry houses, seven kitchen houses, a money house, brooder house; and a poultry and cattle feed room. Equipment includes tractors, plows, tillers, disk, cultivators, mowers, sprayer and corn 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. Eruphas is placed on the production of ornamental plants as projects related to instruction in plant science. While most students have agricultural 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. Students market their projects before they are a year old. For an average year, sales amount to over $950,000. A large portion of this amount comes from nursery sales. The nursery handles in excess of 30,000 plants annually.

The poultry area includes ten individual cage houses for boy's projects. Each house holds 96 birds. Each boy is responsible for the management of the project including feeding and watering of the chicken eggs. The FFA chapter raises about 1,500 chicks annually and they are sold to students for use in their projects. The hatch is kept in one large house with the eggs being hatched in separate boxes. Twelve acres of the farm are devoted to vegetable raising. Student projects consist of crops such as onions, squash, turnips, green beans, strawberries, and peas.

Each year the boys feed out approximately twenty steers. These steers are sold through a local livestock stock owned 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 metro-

The Miami School Farms are the only one of its kind in the State of Florida. The students are housed in dormitories and are supervised closely by a teacher-coordinator. Accurate records are kept on them and the program is a regular schedule by a teacher-coordinator. An advisory committee meets 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 which is indicative of the effectiveness of the program. The Dade County Youth Fair is a significant indicator of student interest in leadership activities and the agriculture program is well represented by students who exhibit ornaments, livestock, peas, tomatoes, livestock, and other products.

Special Programs

Another school of interest in the Miami area is the Douglas MacArthur High School. The school serves over 450 students who have special needs. All are of average intelligence but for different reasons have not been successful 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 in these programs return from 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 Oak School. Students attending this school are referred to the school by the Miami Juvenile Court to the Kendall Children's Home. Two instructors teach agriculture to students in grades eight through twelve at the Silver Oak 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 as raise livestock. Over the years the vocational agriculture program in Silver Oak School has made a significant contribution to the successful rehabilitation of a number of students attending the school.

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 and Technical Education. The administration of the program requires close coordination with all school officials. Principals in the schools are apprised of the activities in the vocational agricultural 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 agricultural program in agriculture is of high quality. New programs and new approaches are tested and continued. 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.
Agricultural Education in New York City

GEORGE CHEIN
Chairman, Agriculture Department
John Brown High School
Fishing, New York

How do you structure a meaningful agricultural education program in an academic high school in New York City? The program at John Brown 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 land labor, indicated by pre-vocational experiences, school and community activities, and related reading; student background, indicated by test scores, grades, and recommendations of teachers; character ratings; and health records to ensure that students can complete the occupational experience program required each summer.

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 percent of the entering students have parents, relatives, or friends who either farm or are now employed 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 have plans for agricultural careers on the personal 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 property area for landscape design, three tractor 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 major 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 into an agricultural college and/or advancement in an agricultural occupation.
- To develop understandings, appreciations, and basic competencies in the science of crops, livestock, soils, mechanical, and agricultural business management.

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

The First Summer

We meet next 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 care and feeding of animals and in the care and handling of plants. This instruction is provided in connection with classroom instruction and practical experience on the farm.

The Second Summer

During the second year of the instructional program, instruction in agricultural mechanics provides the student who wishes to enter 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 second year of the instructional program, students study dairy science, farm 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 10

Students receive instruction in selected basic units in poultry, horticulture, 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 department to evaluate the program 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 the student who wishes to enter 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 second year of the instructional program, students study dairy science, farm 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 agriculture 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 full year of occupational experience even though it is not required.

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 or two-year courses 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 major, others leave because they fail to meet course requirements, and others leave because their families move. At least 70 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 Brown High School is expected to join one of the three student organizations—the FFA Chapter, Fili Terrace (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)
A Cooperative Program Involving Vocational Education and Elementary Education

JEWETT WHITE, Vocational Coordinator Gary, Indiana

Vocational Education

Simultaneously in an area vocational-school (the Gary school) and Proviso High School (the Gary school), a vocational education program for training potential employees for the landscape service occupations. Much of the practical experience in the horticulture program will be carried on at the Proviso High School. The Gary school's main emphasis will be on the horticulture program.

Elementary Education

The Title III program is an outdoor venture for elementary children in the Gary Community Schools. The basic principle 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, the children will learn about the natural environment of the great outdoors and enjoy a stimulating adventure for the urban students.

The Challenge

The challenge is to provide an opportunity for children to experience nature and learn about the environment. The program will be designed to meet the needs of urban students in an outdoor setting.

Laboratory Experience

Two acres of agricultural laboratory provides the training facilities for the program. This land 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 to begin it earlier in the spring. A variety of vegetable and flower crops are grown in our greenhouses and taught to the students. The Main Crop is the bleacher, 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.

Agricultural Education in New York City (Continued from page 95)

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.

FOLLOWUP OF GRADUATES

We maintain an alumni file. Contact in most cases can be made during the first year after graduation. Beyond that a record is kept of alumni visits and correspondence. The most satisfying experiences are to follow the progress of alumni. We have numerous alumini who are now occupying positions of growing importance in educational practice.
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 habit. Once accepted, 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 has burned brush in his yard and drain into the family water system. Walls and 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 ninth grade. Initially, the course is being taught in all but two of the ninth-grade classes of the schools of the district. It is also being taught in one Mononite parish and the school in two grades up to primary of Memore 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 the ninth-grade boys are beginning to use power equipment and tools and can be more easily prepared with the need for safety and the correct use of tools and equipment. Most children are interested in the outdoor 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 enthusiasm and enthusiasm.

Elementary Agriculture Program

The elementary agriculture program is being presented to 350 students including the 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 mov+ers, tractors, and other power-driven equipment. They have not learned the wrong way—yet. They are trying new things, equipment, 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 as they live up to these areas. There are few instructional materials for teaching elementary agriculture. It comes as a real pit 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
La Porte, Indiana

Teachers usually agree that there is a problem in bringing about a satisfactory balance between content and process in the classroom. Teachers face a real challenge when they try to balance the two. Some older teachers have overcome this barrier to good teaching. Some teachers feel that the presentation of a great deal of subject-matter overload 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 how to apply the philosophy of the subject. 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 themselves so that 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 able to adapt the program that is made in relation to what is planned and what is actually taught.

The Proper Balance

There is always the problem in planning 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. That person is in the classroom making the decisions. Better teachers tend to ask the students questions to get information with the results that students have 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 in the classroom which is a 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 are an agricultural mechanics course instruction in the learning principles of a student's engine from H. H. Golden, Teacher of Agriculture, at A. G. Hubbard, High School, at the National American Farmer's Degree at the National FFA Convention in October 1967.
BOOK REVIEWS

FARM TRACTOR TUNE-UP AND SERVICE GUIDE, revised by W. H. Pasady and George Smith, Athens, Georgia: American Association for Agricultural Engineering and Vocational Agriculture, 1966, 22 pp., $3.00.

The manual contains the manufacturer's tune-up specifications for tractors built since 1949 and includes the modules being built in 1966. 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-Heritage, 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 on. 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. Hendon
University of Nevada


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, consumable products by trade names, specifications of filler metals, allowing 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 naval fabrication industry. The listing explains the names which describe proceeds, 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 design 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 test in high school would depend upon the type of program offered.

A Study Guide and Workbook is available for $3.00. It has 24 lessons each for arc welding and oxyacetylene welding. Each lesson follows an outline which includes theory, shop work, and tests.

VOCATIONAL AGRICULTURE FOR CITY BOYS

ROBERT H. HARGRAVE, Teacher of Agriculture
Gainseville, Florida

(Right) Furries and boys thrive on the local laboratory Quiz at Howard Bishop Junior High School.

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

(Right) A Program for City Boys
Howard Bishop Junior High School
Gainseville, 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 enriched the junior high school years as years of exploration, searching, and enrichment. Agriculture, including the broad field of agriculture, should be one of the major fields of exploration during this time in a boy's life.

W. Forest Boy
University of Minnesota
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 test gardens.

The farm at the Walter Ebble Salt High School of Agricultural Science, Philadelphia, Pennsylvania, includes a demonstration herd of nineteen registered Holstein cows. Robert Mackison (handing over cow), Vice President of Harbison's Dairy, presents a registered Holstein cow to the school.

Featuring —

SUPERVISION IN AGRICULTURAL EDUCATION