

Farm Owner	Poultry Breeder
Farm Renter	Manager of Crop
Farm Manager	Hatchery Operator
Fruit & Vegetable Inspector	Broiler Grower
Farm Equipment Sales	Turkey Grower
Farm Equipment Service	Processing Plant Manager
Farm Supply Store Mgr.	Research Technician
Feed, Seed, Fertilizer & Chemicals Salesman	Retail Poultry Store Owner
Technical Assistant	Poultry Feed Specialist
Dairy Herd Improvement Supervisor	Laboratory Technician
Artificial Inseminator	Junior Biologist
Herdsman	Custom Spray Operator
Livestock Buyer	Exterminator
Meat Inspector	Pest Control Supervisor
Research Assistant	Arborist
Food Processing	Pesticide Salesman
Food Inspection	State Horticultural Inspector
Quality Control	Food Brokerage
Food Equipment Sales	Food Purchasing
Food Research & Development	Food Sales
Frozen Food Sales	Ice Cream Manufacturing
Frozen Food Distribution	Dairy Products Manufacturing
Merchandising	Food Plant Management
Pre-cooked Frozen Foods	Floral Design
Garden Centers	Flower Shop Management
Landscape Design	Flower Grower
Landscape Construction	Nursery Grower
Superintendent of Grounds	Nursery Manager
Golf Course Superintendent	Plant Propagator
	Turf Grower
	Park Management
	Horticulturist

New Opportunities

New areas of employment for agricultural technicians keep opening up. Not long ago the field of herbicides created many new technician positions. This continues to grow.

More and more companies are conducting research and development. This calls for many technicians with agricultural competencies. Well-known companies like American Cyanamid, Pfizer, DuPont, American Metal Climax, Inc., National Can, Beech-Nut, etc. are looking for laboratory technicians to assist their PhD's. with research; to serve as analysts, handle animals, run field trials, test pesticides, aid in product development and supervise quality control. Avon Pro-

ducts hired two of our young ladies from Animal Science; Revlon hired a young man from Food Technology. Revlon uses many dairy products in their manufacturing processes.

The development of convenience foods has created many technician positions. While this business now is big, it is bound to become much larger with a corresponding increased need for technicians from agriculture.

The farms of America used to supply an agricultural heritage to many who found employment in the city. Now city-bred young people are getting an agricultural technician education to fill the many agriculturally oriented city jobs. Our college at Farmingdale has been doing this for the last 30 years. If a young person comes from a farm, he automatically has something to sell — his agricultural background; and some people are surprised at how valuable this is, but judging by the willingness of big business to pay, it is a badly needed commodity.

A new field not yet fully opened up, will, I think, demand many technicians from agriculture. I refer to the use of growth regulator chemicals. As our knowledge increases in the area of plant growth stimulation and retardation, I believe many agricultural technician jobs will be created. The young men and women from our two-year agricultural schools, colleges and institutes will be the right ones to handle much of this work.

The use of computers in agriculture is just starting and is certain to grow. What a wide open area for technicians in agriculture! Programming is the big problem. Perhaps this will require technicians with more than two years of agricultural education, but the two-year technician will also have a place.

My conclusions are brief. Facilities for agricultural technician education are increasing. Agricultural technician jobs cannot be had without preparation. Wages are good. Personal satisfactions for work in this field are great. The technician is now a respected worker. There are more technician employment opportunities for people in agriculture than there are people to fill them and in my opinion this will continue for some time.

The Changing Curriculum . . .

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In discussing the employment and Retired Executive Vice-opportunities for agriculture students. Eldred A. Cayce, Director president of Ralston Purina Company, stated that businesses want

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graduates with a broad educational background. This raises the question: Do our present curricula offer students an opportunity for a broad education while specializing in agriculture?

There is considerable re-examination of curricula today. McGrath (1) says that the increasing variability of students and the demands for new types of educational services have caused a continuous re-examination of the aims of higher education. Liberal arts colleges which originally offered instruction in the classical languages, mathematics, philosophy, religion, and later, the modern languages, natural sciences, and social sciences have in recent years been attempting instruction with a vocational orientation in areas such as education, accounting, agriculture, medical technology, nursing, etc. Professional schools, on the other hand, have increased the proportion of the total curriculum devoted to the subjects traditionally classified as liberal arts. Axelrode (6) said that a distinction between "pure" and "applied" knowledge originally provided the basis for the uniqueness of the professional school curricula; but since World War II, this distinction has been found to be no longer functional or philosophically defensible.

These changes are in harmony with Woodrow Wilson's (3) statement:

The separation of general and special training is an acute symptom of the disease of specialization by which we are now so sorely afflicted. . . Knowledge must be kept together. . . the liberal education that our professional men get must not only be antecedent to technical training; it must also be concurrent with it. . . No more serious mistake was made than the divorce of technical or practical education from theoretical.

Alfred North Whitehead. (3). one of the greatest philosophers of education of all time, expressed it this way:

The solution which I am urging, is to eradicate the fatal disconnection of subjects which kills the vitality of our modern curriculum. There is only one subject matter

for education, and that is life in all its manifestations.

Many people in both liberal arts and professional institutions are recognizing that American higher education has twin responsibilities to prepare youth to live and to work. At the same time that McGrath (1) upholds this dual objective, he points out some risks in the present development.

One is that both liberal arts colleges and professional schools instruction may be concerned with the trivial and the transient rather than the significant and the permanent. The distinction between a trade school and a college lies in just this difference of philosophy and of emphasis on controlling ideas rather than on details and techniques. All specialized education offered by colleges, whether they are liberal arts or professional schools, should be of a level and dignity worthy of a institution of higher education. . . If liberal arts colleges are going to offer instruction in business education and cooperate with hospitals and nursing programs, they must maintain these courses at the same level of intellectual operation and generality as the instruction in the older academic disciplines. In sum, all subjects must be taught in a 'liberating' spirit. In the words of Aristotle, "They must befit a 'free' and not a 'menial' or 'servile' man."

McGrath also points out the danger in any single school offering a great range of courses:

The continued health and prosperity of American democracy requires that the colleges offer a wide range of degree programs. In the interest of economy of management and the level of achievement it is no less necessary that individual institutions not attempt excessive diversification of their offerings.

Another danger, according to McGrath, is:

Institutions in their eagerness to satisfy the demand for professional training may permit this objective to overshadow others concerned with the cultivation of those traits of mind, character, and spirit which typify a civilized

human being. To a degree, this has already happened within established academic disciplines in the liberal arts colleges where often students' programs are so highly concentrated in one field, or even one narrow subdivision of it, as to preclude the kind of education essential to broad understanding and intellectual versatility.

At the NACTA Meetings in Huntsville, Texas. David C. Knapp (2), Associate Director of the Study of American Colleges of Agriculture, raised the question as to whether a B.S. degree program should be directed toward preparing a man for his first job alone, or whether it should prepare him to think for himself and to grow professionally over a lifetime. He pointed out that these are not necessarily incompatible goals, but stressing one against the other may operate to the detriment of the individual. For example, if full stress is placed on the technological knowledge required for the first job, then it is entirely possible that not enough emphasis will be placed upon the principles upon which all future intellectual development may be based. Dr. Knapp summarized by saying:

As a general proposition, I think the question which is before us here is whether we can seek to provide the opportunity in an undergraduate program for both educating men and training manpower. I think this is possible; at least, I hope that it is.

McGrath (1) states:

The curricula of liberal arts colleges have become greatly proliferated and fragmented. Institutional programs have been divided into eighteen or twenty departments, and the departments in turn have splintered their offerings into hundreds of courses. . . This extravagant offering of advanced specialized instructions in the various disciplines has had a deleterious effect on most institutions. In the first place, it has adversely affected the education of undergraduate students by permitting them to enroll for highly advanced and specialized courses that ought more properly to be offered in professional or graduate schools. Their undergraduate edu-

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cation is commensurately narrowed, since they are prevented from taking courses in fields outside their major.

Second, most undergraduate colleges do not have sufficiently high enrollment to provide classes of economically justifiable size at the junior and senior levels. . . . Advanced instruction, therefore, becomes very expensive. The impact of these wasteful economic practices on institutional status is often severe. Institutions are beginning to recognize that because of the expense of advanced instruction for few students, they are unable to provide salaries of suitable magnitude to compete with the larger institutions. The quality of their programs is correspondingly reduced.

There are colleges reversing the trend of multiplying courses. Franklin and Marshall College decided that eighty courses could be eliminated from its curriculum without any damage to the educational program; and Parsons College, in a reorganization of its program, cut its curriculum offerings from 755 to 169 courses.

In a paper identifying major trends and issues in undergraduate education in the agricultural sciences, prepared for publication later this year, the Committee on Educational Policy in Agriculture made a statement as follows:

One of the major trends is consolidation of courses and curricula. Consolidation has thus far affected mostly the animal sciences, the plant sciences and food science and technology. Thus far, there

has been more consolidation of courses than of curricula. But there is a trend toward a pattern that includes only a limited number of curricula, usually animal science, plant and soil science, agricultural economics, agricultural engineering and agricultural education. Nearly every college of agriculture has recently developed, or is in the process of developing, consolidated courses and/or curricula in the animal sciences.

In discussing curriculum changes, Joseph Axelrod (6) says that the American campuses are in ferment; this is the reply of the sixties to the standardized curricula which the fifties inherited and proliferated. If colleges of agriculture are to achieve excellence in offering students professional training and a general education, they must continuously examine their curricula, area by area and course by course, to determine what is essential. Only by reducing professional training to the essentials can they provide students the opportunity for a broad education during the limited undergraduate years.

The task will not be easy, especially where the offerings are too numerous. A university president commenting on curricula change said, "It entails all the physical and psychological difficulties of moving a cemetery." Nevertheless, the job must be done. With some pruning, some grafting, and continuous cultivation, we can maintain a vigorous plant that will supply a vital need of our modern world.

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