Structural changes in the economy of the commercial farm firm have taken place simultaneously with structural changes in the off-farm segment of American agriculture. These structural changes must be viewed as complementary in nature. It would be difficult if not impossible to discuss the implications for teaching programs in colleges of agriculture of structural changes in the economy of commercial farm firms independent of the off-farm structural changes. Therefore, this discussion will also involve references to the off-farm segment of agriculture.

**Structural Changes Influencing Educational Needs**

The commercial farm operator has become a specialist in production and increasingly so as a commodity specialist. This development calls for improved and specialized knowledge of a technical and managerial nature. Also, as Breimeyer points out in his paper, more and more of today's farm management has moved off the farm, but not out of agriculture. It has shifted to absentee landlords residing nearby; to technical sales-service representatives of farm supply and commodity processing and distribution firms; to private and public credit agency representatives; to professional farm management counselling services; and not to be forgotten, publicly supported continuing education program specialists.

So, on one hand, the technical knowledge and the managerial requirements of the commercial farm operator may well have increased; but he has many managerial and technical assists available to him. The future competitive position of individual farm operators might well depend as much upon his ability to screen and utilize the proper input mix of these technical and managerial assists as upon future farm price-cost relationships.

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1Harold Breimyer, "The Farm Firm in the Structure of the Agriculture 'System'," pages 1-10 of this report.
Hence we observe in our modern day agriculture the development of a peculiar and strengthened interdependence between the commercial farm operator and the many off-farm related private firms and public educational agencies. The farmer of several decades ago was more "on his own." The complexity and dynamics of today's agriculture places a great many more persons on the farmer's team. This emerging environment calls for unique and different managerial and technical skills and competencies. Heady and Ball pointed out in their paper that tomorrow's farm operator will require a different mix and potency of managerial aids and technical knowledge. Also the proportion of this assistance that farm operators will require and request from publicly supported and private sources will differ. These changes have important implications for future educational emphasis for agricultural graduates returning to the farm or becoming part of the growing army of managerial and technical assistants.

Farm capital, apart from land, represents over two thirds of total farm inputs today. Some 1980 projections suggest that this proportion will increase to as much as 80 percent. This increased emphasis on capital places commercial supply firms in a position not only to merchandise and increased volume of capital inputs but makes them responsible for developing and distributing information materials. Thus, representatives of today's agriculturally related firms become more than mere salesmen of commodities or services. They become educators as well. Agricultural curricula must take note of this. Much of the newly introduced technology into farming today is of the labor-displacing, output-increasing type. The proper choice of kind and amount of technology often represents major capital commitments of an irreversible nature. The effects of various adopted technologies on the operator's managerial capacities are also important.

Several developments have important implications for teaching programs of colleges of agriculture. These include the combination of reduced farm numbers and the accompanying increased scale of operations and capital requirements; greater product specialization; greater specification production; growing importance of non-land capital inputs; strengthened market power of major farm supply, processing and distribution firms, and the vertical and horizontal integration effects on shifting or restructuring of the managerial function. The growth and proliferation of knowledge in agriculture combined with the changing managerial and technical needs of tomorrow's agriculture commit our colleges of agriculture to constant, critical reviews of their teaching programs. Our colleges of agriculture, because of their firm commitment to public service, must take the risk of leadership in developing appropriate teaching programs rather than sitting back comfortably and waiting until outside pressures force recognition of needs.

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3 Ibid., p. 13.
Implications for College of Agriculture Teaching Programs

The major purpose of this paper is to outline the breadth and content of educational programs which colleges of agriculture should be offering in response to changing educational needs associated with structural changes in commercial agriculture. Technician training, baccalaureate programs, and non-degree and degree post-baccalaureate professional improvement programs are discussed. Our agricultural colleges must understand their public commitment to serve the needs of a wealthy and affluent society characterized by changing tastes and preferences, advancing technology, increased reliance on capital goods, and a changing quantity and quality of natural and human resources. Combine with this an almost insatiable desire for more and more of the "good life," and you have some sense of the commitment that colleges of agriculture must feel to our society. Administrators and faculty, when considering educational needs in agriculture, must envision themselves in a broad economic development role. They must appreciate the important contribution that agriculture can make to the nation's economic development. For this reason, a premium must be placed on quality of agricultural training, and the emphasis must be such that agricultural graduates compete effectively in prospective employment markets.

Objectives of Collegiate Agricultural Teaching Programs

The first step in developing teaching programs is an assessment of the role of professional colleges in a university system. Essentially, their role is to provide an educational program that encompasses a general education in the natural and social sciences and the humanities as undergirding for curricula, courses, and teaching approaches oriented to a major field of professional agriculture. The development of major areas of professional agriculture. The development of major areas of professional specialization within agriculture should reflect a constant sensitivity to the changing educational requirements of the agricultural sector of our economy. College administrators and faculty must project the current trends in educational needs so that existing college programs will reflect the necessary wisdom and foresight. Otherwise, we are condoning a greater rate of educational obsolescence than can be afforded.

Since a curriculum or program is really a "plan of learning" it must incorporate courses and teaching methods which develop the student's understanding of relevant principles and concepts. A student must be able to formulate a generalization in his own words and be able to recognize illustrations of it and be able to use it in his own thinking and planning. A student must learn ways of carrying on inquiry and attacking problems. In any course, he should be expected to carry on intellectual activities characteristic of that discipline or field of science. Interdisciplinary or departmental senior seminars can contribute greatly to development of these traits and the ability to integrate the total educational exposure.
Effective agricultural curricula should provide opportunities for students to acquire abilities and understandings which are important and which cannot be effectively attained outside of college. The technical exposure can be reduced significantly if necessary, since this can be "picked up on the job" in many areas of employment. Also technical knowledge quickly becomes obsolete in this age of rapidly advancing technology. Principles and concepts are less likely to change. Therefore, greater emphasis should be placed on the principles and concepts upon which the student can build for the future self-education and future professional degrees. This kind of educational emphasis will not only reduce the obsolescence rate of a college education but will also prepare graduates for more efficient retraining through professional improvement programs.

All agricultural programs should encompass a general education in the natural and social sciences, humanities, and communications as a foundation for future professionalization in agricultural specialties. One should not be so concerned about training for the first job, or the subject matter that has immediate application. Instead, curricula should provide an educational exposure which will prepare the student with a life-long intellectual base. Too frequently the heavy emphasis on training for the first job is at the sacrifice of depth and breadth in other areas which are so essential to the student's general education and science foundation. The latter are essential to making agricultural graduates more competitive with graduates emphasizing business or liberal arts in their backgrounds. All courses should recognize the student's background in the basic sciences and mathematics and should be oriented toward some clear-cut educational objective. They should not only be interesting but challenging to the student. Too frequently, courses fail to recognize the improved educational base that students now receive in most high schools and, therefore, students are not challenged by many of the introductory courses.

The competitive labor market for professionals is growing more intense and at the same time is making greater demands on our graduates. In view of this, do our programs of study and our teaching methods instill in the student the inclination and motivation toward self discipline for continued study after graduation? As teachers we should scrutinize our courses and teaching approaches to insure that we are accomplishing this goal. We should ask ourselves, What are we trying to do to our students? How do we want them to be different as a result of taking our course?

Too frequently we hear faculty members remark that we should not stiffen up our curricular requirements or raise our grading standards or we may lose students. I think the question that needs to be asked is, What are the consequences if we do not? How many good students are we losing through nonchallenging, overlapping, obsolete, busy-work courses? How can we, without providing a foundation in mathematics and basic sciences, introduce the student to penetrating analyses in the applied professional courses offered at the upper division level? Professional courses with sufficient depth and breadth must be based upon a rigorous foundation in the fundamentals of the
disciplines involved. One way to insure this is to require a rather standard freshman core for all agricultural programs. This core could be modified slightly in the sophomore year to take cognizance of the slightly different fundamental requirements of different upper division professional areas of specialization. Professional programs should embody enough flexibility to permit structuring a graduate study preparatory program for those students so identified and so motivated.

Lest I be misunderstood, I am not arguing for necessarily raising college admission requirements. But, if our colleges of agriculture do not offer programs with sufficient depth and breadth of education as well as challenge, then our highly motivated, high ability, professionally-oriented student will either lose interest in college or transfer to another college or unit of the university where he will be challenged and stimulated. We can ill afford this in our colleges of agriculture. In the final analysis, the strength of a college depends upon the scholastic standards of its faculty and students.

Placement Patterns

A review of the placement patterns for baccalaureate degree agricultural graduates will provide insight into current and future educational needs. The results of a nation-wide study of over 3800 spring, 1964 baccalaureate graduates of colleges of agriculture showed that 57 percent were entering civilian employment, 29 percent were planning graduate or professional study and 14 percent were going into military service. If we assumed that the 14 percent going into military service, upon return to civilian life, would go into civilian employment or graduate or professional study in the same proportion as did their classmates, then we would find 67 percent going into civilian employment and 33 percent into graduate or professional study.

Of those entering civilian employment, an estimated 93 percent accepted positions related to their agricultural education. Of those planning graduate or professional study, 81 percent expected to enroll in their major agricultural fields.

The most popular occupation of those entering civilian employment was farm operation and farm management-related occupations (26 percent). Other major occupational categories, in order of frequency, were teaching, technical service and consulting, sales, extension work, and research and development. The results of a similar 1963 national study disclosed comparable placement patterns. 4

4 "A Survey of Placement, Agriculture and Forestry, June, 1963 to June, 1964," Research Committee, Resident Instruction Section, Division of Agriculture, Association of State Universities and Land Grant Colleges and the Committee on Educational Policies in Agriculture, October 1964, Mimeograph, Series Publication #4.

Farms and ranches were the largest single type of employer, followed by government and educational institutions. However, the several types of employers ordinarily designated as "business and industry," when combined become the largest category and represent one-third of the baccalaureate graduates.

The study revealed some rather interesting regional differences in placement patterns. Most important was the fact that 40 percent of the graduates of northeastern U.S. colleges planned graduate or professional study as compared to only 25 percent for the north central colleges. Percentages for the southern and western colleges were 27 and 28 percent, respectively. As expected, 96 of the graduates of the north central colleges who were entering civilian employment were going into agricultural employment, compared to 84 percent for the graduates of northeastern colleges. Comparable figures for the southern and western colleges were 90 and 96 percent, respectively.

These data represent replies from 47 of the 67 U.S. institutions offering instruction in agriculture and accounted for 83 percent of the total fall 1964 agricultural college enrollment. The replying institutions could not account for 16 percent of their graduates. One might suspect that a relatively high proportion of these graduates with "unknown" employment entered farming or non-farm businesses.

Information on agricultural baccalaureate graduates at the University of Minnesota entering civilian employment shows that more than 60 percent accept initial employment in some phase of business and industry; about 10 percent return to the farm; and the remaining 30 percent accept government employment in vocational agriculture, extension work, soil conservation service, college teaching, public credit, regulatory agencies, etc. By contrast, a decade ago, 60 to 70 percent of those entering civilian employment entered various federal, state and local government agencies. We anticipate the trend toward increased employment in business and industry to continue at Minnesota as more firms increase their employment of technical sales and service persons, management trainees, etc. The fact that technical and scientific position require more advanced study than previously explains the proportional reduction in placement of agricultural baccalaureate graduates in non-business oriented positions.

Supply-Demand Situation

An inventory of jobs available in 1963 to baccalaureate agriculture graduates for an 11 state north central area disclosed 3,152 positions. Sales and management in business and industry represented 32.9 percent of the number. Teaching vocational agriculture represented 10.5 percent, resource and community development and planning 12.1 percent, farming and herdsman positions 6.5 percent, county extension 5.3 percent, credit 4.7 percent, communications 5.5 percent, and other represented smaller percentages. The 3,152

positions represent 2.2 jobs for each baccalaureate graduate that year when adjusted for those graduates planning to go into graduate study and for duplication of jobs in various states. Therefore, it will be necessary to draw upon graduates from the biological, physical, business, and commerce curriculums to meet these placement opportunities in agriculture.

Projected Demands

An estimate of future demand for bachelor degree agriculturists by the 12 North Central colleges in 1963, ranked agricultural industry, sales and management first with agricultural education second, and agricultural extension and agricultural journalism much lower. This same study indicated the strongest demand for advanced degree graduates would most likely be in agricultural economics, with food science and bio-chemistry ranked next.

The above summaries of current placement patterns, projected demands, and expressions from industry people make two points amply clear:

1. Our colleges of agriculture are failing to attract sufficient students to meet half the current demand in spite of the fact that these colleges are uniquely qualified to offer students an interdisciplinary approach to the application of the natural and social sciences to many of the agricultural science, business, and economic specializations.

2. Demand will most likely increase as programs increasingly reflect sensitivity to proper educational emphasis and as revised programs are interpreted to agriculturally related businesses and public agencies.

Many agricultural industries are growing more conscious of their need for agricultural college-educated manpower. Some agricultural industries are projecting the number of college graduates on their payroll to double within 10 or 15 years. Competition among firms requires strengthening the training of their sales, technical, and management force. Also more and more firms are raising their standards to the level of a master's degree.

Dilemma of Student Enrollments and Manpower Needs

Why then hasn't the market place, in the face of this strengthening demand for college trained agriculturists, attracted sufficient numbers of students to colleges of agriculture? I believe that there are a number of forces operating to explain this. First of all, the popular press version of farm surpluses, farm subsidies, Billy Sol Estes episodes, etc., has given agriculture a poor image. This is not improved by declining farm numbers, rising capital requirements, and declining operator incomes in many areas. All of these only serve to convince many high school seniors, particularly farm boys, to consider

7Ibid., p.2.
more favorably other occupational opportunities. Perhaps the most serious deterrent to increased enrollment is the general image that the main function of colleges of agriculture is to train students to become farmers. Little do they realize that less than one-fourth of present agricultural graduates return to the farm. This statistic is rather shocking to many farm parents and urban parents who are not aware of many other promising professional areas open to agricultural graduates. Many agricultural college faculty members have not made any concerted effort to interest young men and women in going to college. Why? Are we ashamed to recruit? I do not believe we should be. In fact, I think we have a responsibility at least to make aspiring high school graduates aware of college of agriculture programs and career opportunities. It is shocking to realize that today only one of 10 vo-ag graduates enrolls in a college of agriculture.

But we should not think only of farm youths. Currently, over half of the students in colleges of agriculture in the United States are from non-farm homes. Many of our agricultural curricula prove very attractive to non-farm students. A few good examples are food sciences and technology, horticulture, agricultural and biological science, forestry, wildlife, conservation and resource and community development. In fact, many urban high schools with strong biological and physical science curricula will provide excellent foundations for most agricultural curricula. Farm experience is no longer a prerequisite to employment in many agricultural occupations.

Programs to Meet Changing Educational Needs

Baccalaureate Degree Programs

An important factor influencing agricultural enrollments is the image provided by our traditional production curricula, e.g., animal husbandry, dairy husbandry, agronomy, farm management, etc. These commodity-oriented curricula often give the erroneous impression that the programs are farm-oriented, lack a scientific base and are non-professional in nature. I think much could be gained by many colleges of agriculture if they would revise their traditional agricultural curricula along the lines of vocational or occupational areas. For example, after much soul searching at Minnesota, the College of Agriculture Curriculum Study Committee recommended and received faculty support, in principle, for five agricultural programs to replace our present 22 separate curricula and options. These programs are Agricultural Production and Industry, Agricultural Business Administration and Economics, Biological and Physical Sciences in Agriculture, Food Science and Industry, and Resource and Community Development.

The program titles themselves reflect a sensitivity to the need for developing programs to meet the growing needs of the business and food science areas, resource and community development, and graduate study preparation. It was considered important to give visibility to these areas.
Under the above proposal, a student would not be identified with a department until he had selected a specific area of specialization within one of the programs. He could delay this decision until the end of his sophomore year if he desired. In the meantime, the freshman and sophomore programs would emphasize a solid base in the supporting sciences (chemistry, biology, mathematics, physics, economics, accounting, etc.), and also meet many of the general education and college requirements in communications, humanities, and social sciences. Also, important to the student during these first two years is the opportunity to explore alternative career areas before committing himself to an area of professional specialization and assignment to a particular department.

A conscious effort was made in describing these five programs to insure an interdisciplinary approach in defining the objectives of each program and in outlining program requirements and recommended courses for various areas of specialization for each program. The latter step is now being taken by a faculty committee for each of the programs. It is hoped that these interdisciplinary program committees will develop programs more sensitive to agriculture's changing needs as suggested by the structural changes in agriculture.

The College of Agriculture Curriculum Committee at Minnesota is hopeful that departments will carefully scrutinize existing courses and examine the contribution of each course to revised program objectives. Some courses may be declared obsolete and dropped. Other courses may be collapsed and merged with closely related courses of other departments. In other instances, new courses will be necessary. The latter may be developed by single departments, or through the joint efforts of several departments or disciplines.

This is not to suggest that present departmental structure be modified; only that an interdepartmental or interdisciplinary approach be taken in formulating revised programs and courses. This is particularly true in the more applied subject matter areas which should emphasize the problem-solving approach. More serious consideration should be given in these areas to courses extending over several academic terms, with each course carrying more than the usual three credits. The "teacher team" approach is appropriate in these instances. Such deliberations may suggest some departmental realignments more effectively to attain new program and course objectives. Staff and administrators must be prepared to experiment with new teaching approaches and innovations. Individual instructors must continually search for improved instructional approaches adapted to their peculiar personality, temperament, and course objectives.

**Technician Training Programs**

If I may digress briefly, I think there is a need and a place for technician training in agriculture. But let us not place the technician-oriented student in the same courses with out collegiate, baccalaureate, professionally-
oriented students. The interests, motivation, and frequently the aptitude of these two groups are so different that intermingling in classes often creates serious incompatibilities. Instead, we should establish separate one or two - year terminal "technical certificate" or "associate degree" type programs, and if at all possible, offer separate courses for this program. If colleges of agriculture do not meet this need, then junior colleges will assume this responsibility. This development could be serious if the junior colleges lack the necessary laboratory facilities and qualified faculty. The other alternative is establishing separate vocational and technical institutes. I visualize this to be a desirable solution to meeting the technician needs in agriculture. Technicians, in support of scientists and engineers, can appreciably increase our total professional output.

Post Baccalaureate Programs

I seriously doubt if we can any longer consider the baccalaureate degree in most professional schools, particularly agricultural colleges, as purely a terminal degree. Instead, it must be increasingly thought-of as a foundation for training practicing agricultural professionals, either through more advanced graduate study or five-year professional degrees in selected areas. This is already obvious in agricultural extension, vocational agriculture and those teaching vocational agriculture in junior colleges or vocational-technical schools, and natural resource management. The vast expansion in our fund of knowledge plus the growing complexity of problems require that a multitude of disciplines be brought to bear on most problems. This extends the period necessary properly to train our practicing professionals in agriculture. Thus graduate education is going to become a more important part of our agricultural college's function in the future.

One excellent example of this is the area of resource and community development. In addition to the fields of agricultural economics, agricultural engineering, soils, fishery and wildlife, and forestry, we must call on sociology, psychology, geography, and political science, to mention a few. Since the graduate from this resource and community development area will need to develop a specialty in order to be marketable upon graduation, if I may use that term, he will not be able to get the view of a multidisciplinarian in the usual time required for a baccalaureate degree. Most colleges of agriculture have faced up to this problem and are offering either a five-year professional baccalaureate degree or a master's program in these areas. Experience suggests that five-year professional programs offering only a baccalaureate degree lack sufficient appeal for most students, except where the field specifically recognizes it and rewards the graduates accordingly. In most cases where considerable work is required beyond the normal baccalaureate requirements and where this work is of graduate study quality, the student expects a master's degree. Colleges must face up to this reluctance toward five-year professional degrees. It is becoming obvious that colleges must either redesign their four year curriculum or fashion a genuine master's program in these areas.
The plan B (non-thesis, starred papers, and extra course credit) master's degree was introduced at many institutions as an expression of meeting the needs of practicing professionals without requiring conduct of research and writing a thesis.

This raises another important question. What about the baccalaureate graduate who has been "on the job" for 5, 10, 15, or more years and suddenly finds himself facing the prospect of either being satisfied with his present professional status and perhaps salary or pursue a professional improvement program of study? Pressures are mounting on our colleges of agriculture to develop professional improvement programs. Those expressing a need include county extension agents, vo-ag instructors, home economists, foresters, and professional workers in public educational, credit, and regulatory agencies as well as managerial, administrative, and technical personnel in agribusiness firms. The fields of elementary and secondary education, business, and engineering have long recognized the need for refresher-type courses and more recently for longer professional improvement programs.

In the latter, the person usually pursues an advanced degree (either professional or academic) or receives professional improvement credits. Non-degree professional improvement courses would probably be of an open end nature, have the same "hour requirements" as regular graduate level courses, and have the same course fee as graduate credit courses but be designed specifically to meet the existing and emerging needs of the clientele.

There are essentially three groups of graduates who are in need of professional improvement:

1. The first group includes those who need only periodic refresher-type courses to become briefed on recent technological developments, up-to-date information, new operational techniques, etc. These might be served by short, intensive professional improvement courses in the form of workshops, clinics, conferences, seminars, etc.

2. The second group includes those who need slightly more educational exposure to gain more depth or breadth in selected areas of their undergraduate major or more breadth of a specific nature in a closely related field. For these students, the "special student" classification is often adequate to facilitate registering for regular courses. Usually the student is not pursuing another degree and the courses would not generally be recognized for graduate credit.

3. The third group includes those who need extensive retraining, either in their undergraduate major or a closely related field, or in a completely new area of study. Those who qualify
for admission to the graduate school might best enroll formally as candidates for advanced degrees. This could be done under the plan A master's, which is rather specific; the plan B master's, which is more flexible, or a special master's degree such as a master of agriculture, which could be a generalist-type degree. Those who cannot qualify for admission to the graduate school could enroll for professional improvement credits of some sort.

The special master's degree poses some difficult and knotty questions. Immediately the question arises, Isn't this a watered down master's degree? True, they are "professional" or "practitioner" degrees in contrast to the "academic" degree and usually have little or no component of original scholarly work such as research and thesis. Also, they correspond to the concept of training or instruction or sometimes, even indoctrination. Yet, very acceptable degrees of this type are being awarded regularly in a number of professional schools. Minnesota has a "master of agriculture" degree under consideration at the present time. I feel very strongly that we should pursue this effort more intently. I believe that such a degree is plausible even in an environment of research-oriented advanced degrees. Largely because of tradition many faculty members may find this position difficult to accept.

Typical of the comments concerning present master's programs by professionals seeking professional improvement are that the programs lack flexibility and are not broad enough --- or, the programs are too research-oriented. Pressures from past graduate, practicing professionals for postgraduate education to improve their competencies necessitate modifications in current educational programs. I think this need can be met without lowering standards. Other criteria must be developed to measure scholarship and mastery of a particular area. In many instances, different courses will be needed since the course objectives are different from those of academic degrees.

Those persons mentioned in groups two or three above who live within commuting distance of the university could easily enroll and attend classes either as regular daytime students or in the evening general extension-type programs. But many aspiring professionals live beyond a reasonable commuting distance. Also few out-state professional personnel employed on a 12 month basis can secure leaves for the purpose of professional improvement. Some arrangements must, therefore, be made to take the education to these professionals. Several alternatives exist. The university can either establish off-campus continuing education centers in the state or simply arrange to offer courses at certain locations at specified times. The student can enroll in these courses in the same manner as for on-campus courses. The course may or may not carry graduate credit. A policy of not rating these as graduate-level courses would be desirable where prerequisites were respected to prevent diluting graduate level courses with students lacking background. Teaching courses off-campus helps students obtain educational improvement, and if enrollment is large enough, according to the experience of a number of schools. Such courses can be offered very economically. Limited departmental resources at some institutions have restricted expansion of out-state courses below the desired offerings.
I sincerely believe that the university has a responsibility to serve the needs of the many qualified professional people who are in need of and are desirous of additional professional training. Consideration of these needs deserves high priority attention by college administrators. I would go so far as to recommend that limited appropriations be shifted from some resident instruction programs to support graduate professional improvement programs. Often the same course can be offered on-campus and out-state during the same school term. This practice makes for efficient use of course preparation time by faculty. This is currently being done at Minnesota.

Concluding Remarks

In conclusion, I would make several observations. Our administrators are becoming more sensitive to the need for developing professional improvement programs. On many campuses, faculty members are rediscovering the undergraduate. Some faculty members who once concentrated on basic research when it was fashionable are requesting opportunities to return to the undergraduate classroom. Many faculty members are becoming more concerned about what they teach and what is being taught in related courses. In other instances, administrators are beginning to ask their more matured and effective teachers to offer the introductory and lower division courses. Most colleges of agriculture have either just completed or are busily engaged in a critical review of their agricultural curricula, courses, and teaching methods. Also there is a renewed interest by many faculty members in occupational and academic advising of undergraduates.

These are healthy and most welcome signs in colleges of agriculture, particularly following an extended period of undergraduate neglect during the late forties and fifties, when there was a strong push for basic research and strengthened and expanded graduate programs. The dearth of graduate students in many areas made departments cognizant of the need to give greater attention to the quality of their undergraduate programs and to show greater concern for the undergraduate. Graduate programs simply ran out of qualified raw material. It was a choice between offering weaker advanced degrees, providing for the correction of considerable undergraduate deficiencies, or strengthening the undergraduate programs.

Some faculty are dedicating themselves to the cause of developing undergraduate academic programs attuned to progressive educational objectives, undergirded by a virile and effective academic and occupational advising system.
The secret to developing sound educational programs is to put the student first, the college and department traditions last. Let us set aside our professional jealousies, tear down the traditional college and departmental barriers, and jointly and objectively approach the task of developing teaching programs attuned to the age in which our graduates are going to devote their professional life. These programs must give the student the opportunity for effective learning and for developing his maximum capacity. They must provide a fundamental understanding of the basic physical, biological, and social sciences. They must give some of the broad educational experience offered by the university. And finally, they must provide the student with technical knowledge and principles required for a degree of specialization in some phase of agriculture. Society expects nothing short of this from those of us in a position to influence future educational programs of our colleges of agriculture.