

Land-Grant Colleges and State Universities titled "I've Found My Future in Agriculture," and "There's a New Challenge in Agriculture." Perhaps I am dreaming a little to think we can come up with anything that would approach either of these brochures, but it would help us a great deal if we could get something that would come

close to telling young people what is available to them in the non-land-grant colleges. We should recognize that this task would take some time and get a committee established to explore the possibilities so a report could be submitted at our next regular meeting.

## A PROGRESS REPORT

# Study of American Colleges of Agriculture

David C. Knapp, Associate Director  
Study of American Colleges of Agriculture  
Sponsored by the Carnegie Corporation

I should like to thank you for your invitation to discuss with you the Study of American Colleges of Agriculture. It would be premature for me to attempt to summarize at this time our conclusions. Although Dr. Kellogg and I have been working on the Study for approximately one year, we expect another year to elapse before it is complete.

As you know, the Study focuses upon agricultural colleges which share responsibility for teaching, organized research, and extension functions, i.e., the land-grant institutions. Because we are interested generally in the picture of agricultural education in the United States, we are also visiting a number of non-land-grant institutions. It was my privilege to visit one in California, and Mr. Noble Clark, who is a member of the Study's Advisory Board, is acting as a special consultant with prime responsibility for visiting the non-land-grant agricultural colleges. Through these visits, we are seeking to get a picture of the activities in the agricultural colleges and schools across the Nation and, just as importantly, to obtain the views of faculty and administrators on the problems which they face and the directions in which they believe their institutions should move in the future.

It should be made clear that we do not see this study as a way of drafting a blueprint which all agricultural colleges should use in looking to the future. Dr. Kellogg and I have both been impressed by the real diversity which characterizes our colleges of agriculture. Each institution has evolved its own program and organization within its own circumstances. Each possesses its own tradition. This is as it should be. Nothing could be worse, in my opinion, than for all institutions of higher education in the United States to be identical.

It would be hoped however, that all schools and colleges of agriculture would seek to be alike in certain respects—that is, I would hope that each would seek to carry out educational obligations and responsibilities at the highest level of

professional competence, to conceive educational programs reasonably in terms of available resources, to strive for academic excellence, and to search out and implement fundamental principles of learning and scholarship. These may sound like platitudes, but I mean them as more than this. We do justice neither to ourselves nor to young people when we take on obligations which are beyond the scope of our resources and which we are unable to carry out at the high standards which today's complex society requires. Thus, I would hope that whatever any institution undertakes in the field of education—be it in agriculture, or elsewhere—it would undertake with the assumption that it will do nothing unless it can do it well.

It is my intention to discuss with you today two aspects of the Study: First, our concern for meeting the educational needs of rural society; and, second, some observations on the purpose and objectives of an undergraduate education in agriculture.

### Meeting the Educational Needs of Rural Society

A democratic society, it is generally agreed, should seek to ensure that educational opportunity is equally available to all its segments. Moreover, in a society dependent upon technology, each individual should be able to strive toward the highest level of education that his talents permit if he, individually, and society, totally, are to realize their full potential.

Yet considerable evidence exists that urban and rural youth do not share equally in educational opportunities and benefits. Most of you, I am sure, have read and pondered over Dr. Conant's study on the American high school. If you have not, I would urge you to do so, for Dr. Conant's observations on the disparities between urban and rural high schools are wholly pertinent to men seeking to prepare young men and women for a life in modern agriculture.

Equally significant are recent statistics which point to a widening gap between the educational level of rural and urban citizens. According to

the 1940 census, the median school year completed by farm dwellers was 7.6, whereas urban dwellers had completed 8.6 years. By 1960, twenty years later, the level of schooling achieved by each group had increased—to 8.6 years for the farm dwellers and to 11 years for the urban dwellers. Note carefully that the median level for the urban dweller is now 2.4 years above that of the farm dweller, in contrast to only one year's difference in 1940. Confirming these grim statistics is the fact that, in 1960, only 7 per cent of farm youth between the ages of 20 and 24 were in college, as opposed to 17 percent of urban youth in the same age group.

Equally disturbing is the Census Bureau report that, in 1960, only 3.1 percent of the individuals which it classified as commercial farm operators had completed four years of college or more. Among young farm operators, those under 35 years of age, the percentage was 4.9, in contrast to 2.7 percent for the group between 35 and 54 years of age. Clearly, the proportion of commercial farm operators completing a college education is increasing. Is it, however, increasing fast enough to meet the needs of the farm operator himself? And, equally important, is it increasing fast enough to ensure that the man who lives on the farm is at a level of educational parity with his fellow citizens who live in the city?

Such statistics indicate to me that we, as a nation, are not doing an adequate job in attracting young people from rural areas to higher education. This is not to suggest that all men and women today require a college education; nor does it suggest that all young men and women who come from a farm background should have an agricultural education at the college level. It does seem obvious, however, that not enough of our farm youth are completing an education beyond high school—one which will aid them either in their occupations as farm operators or in some other kind of enterprise—be it in the small town or the city, in an agriculturally related business, or one which is quite foreign to agriculture.

It is my firm conviction that one prime task that confronts a college or school of agriculture today is that of exerting leadership to raise the educational levels attained by rural people. This is by no means an easy task, but it is an essential one. Any number of approaches might be developed. Let us concentrate on three of these.

First, since it is true today, as it was in the past, that the home is the place where most major decisions on lifetime careers for young people are made, administrators and faculty in agricultural colleges should give high priority to explaining to rural parents the importance of an education beyond the high school. Unfortunately, many rural parents appear to lack the information necessary for appraising realistically the importance of education and the alternative opportunities open to their children.

Let me cite one example. In the past year, I have heard directly or indirectly of many parents who have failed to encourage their sons—

boys who eventually will own and operate the family farm—to acquire any education beyond high school. At the same time, I have been presented with impressive evidence that successful farm operations in the future will be based on far more complex managerial and technical knowledge than is presently employed. For the exceptional man, perhaps a high school education will suffice; but, for most, it seems likely that knowledge acquired through more advanced formal education may make the difference between success and failure. Thus, in a very real sense, by investing capital in education, the farmer can do as much for his son's success over the long run as he can by investing in land, buildings, or machinery.

The colleges of agriculture must help to convey to parents that common sense, tradition, technical advice, and a generous legacy will not be enough for the son who desires to operate a farm as a sound and efficient economic enterprise, to keep pace with rapidly changing technologies and to compete successfully with others. In other words, as the colleges themselves have come to appreciate the educational implications of the technological revolution they have helped to create, so they must bring an understanding of these implications to farm parents.

Of course, many young men and women of farm backgrounds do not and will not remain on the farm. For these, an education beyond high school is equally important. There are few places in the small towns and in the cities for young people without education or trained skills. Parents in rural areas must understand this situation, and our rural school systems must be designed so that they help ease the transition from farm to city life through more varied educational programs. Moreover, the colleges must find ways of helping young people to appraise their chances of remaining on the farm throughout a life time. For the many young people who will leave the farm five, ten, or fifteen years after starting operation, an education beyond high school can act as an insurance policy, for without more advanced education and training, the chances for meaningful employment for such persons will be slight.

In summary, I would hope that the agricultural schools and colleges, as representatives of our Nation's educational leadership, will assume a greater share of the responsibility for urging rural parents to aspire to more education for their children than they have in the past.

Second, as a corollary to this proposition, the colleges should do more to present to rural parents an understanding of the career opportunities which lie in modern agriculture. It is ironic that, while we have evidence that our rural population is under-educated, agriculturally related businesses and other organizations are seeking more trained personnel with agricultural backgrounds than our colleges and schools can supply. Somehow, we have failed to convey to the farm family itself that agriculture in its broadest sense has rewarding opportunities for

the young men and women who will not stay in primary production.

In the past year I have heard repeatedly that high school counselors do not encourage bright young people to go into agriculture. Undoubtedly, high school counselors and teachers are not well informed about the present-day dimensions of scientific agriculture. It is too easy, however, to place the blame for low enrollments solely on the high schools. Colleges of agriculture, too, must work to impress upon parents the kinds of opportunities open to their children for professional careers in agriculture.

Throughout American history, many parents have encouraged their children to seek out a life which might be more rewarding than they have believed their own to be, counseling them to aspire through careers in law, medicine, business, education, and engineering, to lives of professional status, prestige within the community, and material reward. Such ambitions are part and parcel of the "American dream."

We might well ask ourselves how many farm parents recognize that today their ambitions for a better life for their children can be satisfied through a career in agriculture. How many farm parents, for example, see the life of the plant scientist, the animal scientist, or the soil scientist, either in business or in government, as one which offers the kind of life that they would want their children to have? Quite probably, not many; and so colleges of agriculture, either alone or in conjunction with business, should by example, mode of behavior, publications, and discussions seek to persuade parents that a career in agriculture can be one that offers self-respect, status, and intellectual satisfaction. I have heard much in the past year about the need to improve the "image" of agriculture in the non-agricultural sector of our society. But I wonder whether the first job of image building really does not lie closer to home—among the farm people who are the logical source for the trained manpower and educated men so badly needed in modern agriculture.

One facet of the problem of getting parents and young people to think of agriculture as a prospective professional career may be purely economic. As I look at placement data for agricultural students, I cannot help but believe that many phases of agriculture have been unwilling to pay the price necessary to attract and compete successfully for the best talent. I hear frequently that young people are attracted into the "glamor" sciences—nuclear physics, chemistry, and engineering. Many young people probably do enter these fields because of glamor and publicity. Yet from conversations with young people over the years, I know that many are attracted because they believe that these are the fields which offer the most financially. Many, of course, will be disappointed, but, on the average, the statistics indicate, in my opinion, that many agricultural businesses have done a less effective job than other phases of American in-

dustry in publicizing and acting on economic incentives.

In summary, it seems to me that if farm parents and youth are to envisage agriculture as a desirable professional way of life, a very large job lies ahead; one in which all concerned must seek to demonstrate by example, action, and good public relations that agriculture, in its broad definition, is in fact professionally, psychologically, and materially rewarding as a prospective career.

Third, we might raise the general educational level of rural areas and attract more talent to agriculture by expanding the range of educational opportunities open to young people. In many parts of the country the young man who is interested in an education in agriculture beyond the high school level has before him only the prospect of a 4-year college program. Some states, of course, have short courses at the land-grant college, and some have opened up agricultural instruction in technical institutes or junior colleges. On the whole, however, the latter are still exceptions.

Not all students are motivated toward, nor equipped to undertake, a 4-year college education. Moreover, not all jobs which call for advanced knowledge of agricultural subject matter require a full B.S. degree education. There is good evidence that a proportion of the young people who do not proceed beyond high school would be interested in a 1- or 2-year course in some phase of agriculture. And it is possible that the high drop-out rate which tends to characterize the first and second years of many agricultural colleges might be tempered if young men were encouraged to enter a shorter, technically oriented educational program.

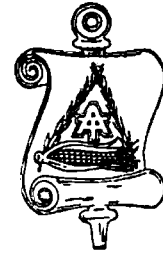
At the present time, across the nation, we have a resurgence of interest in technical education. Hopefully, the colleges of agriculture might take advantage of this new spirit within the American public to re-assess the role of 1- and 2-year educational programs in agriculture. Hopefully, also, this might be done in conjunction with recent re-assessments of high school vocational agriculture and the re-thinking of the B.S. curricula. In other words, if we are to introduce more non-degree programs in agriculture, we should probably avoid simply superimposing these on the present system and look instead at the total relationship—in terms of both the needs of young people for instruction in agriculture, and the needs of agriculture on the farm and in industry for trained and educated persons. Moreover, we should recognize that first-rate, non-degree education in agriculture is expensive, if appropriate facilities, equipment, and faculty are to be provided. I would hope that in reviewing the requirements of technical education, we would never spread financial resources, always in short supply in education, so thin that quality is diluted.

In raising the question of technical education, I recognize that not all persons accept the view

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# DELTA TAU ALPHA

A NATIONAL HONOR SOCIETY



## MESSAGE FROM DTA PRESIDENT

Kenneth E. Webb, Jr.  
Growth in the Future

As is the case with many organizations, be they business, fraternal or scholastic, DTA faces the challenge of selling itself and its benefits to the people whom it wishes to serve. Starting with eight chapters in 1959, it is now composed of eleven chapters located in eleven colleges with one hundred and eighty-one active members. We want to extend the benefits of this organization to as many institutions and students as possible.

Last year an extensive effort, headed by President Dale Minnich, was made to increase Delta Tau Alpha membership. Again this year we intend to further this program in the hopes that we can interest more and more people with our honor society. It is now a little more than a month past the National Convention and we already have two institutions which have applied for chapter charters. Much interest has been expressed by several other schools, so maybe we can meet the challenge posed to us by our national advisor, Professor J. A. Chandler, Sam Houston State Teachers College, when he said "Eleven more in '64"

With the National Convention we concluded another year of activities with Delta Tau Alpha and opened the doors to a new and fruitful year. In opening these doors we did not close those to the year gone by, but left them open so that we may look back and see the opportunities of education and fellowship which were opened to us through membership in Delta Tau Alpha. From time to time we can stop and look back and realize how this membership has helped prepare us for our chosen fields of endeavor in this fast moving and ever demanding world.

It is to be one of our foremost duties for the coming year to see that these doors are opened to more agriculture students across the nation. I know what membership in Delta Tau Alpha has meant to me and will mean to me in the future, therefore I am giving an all out effort to help make this organization grow.

## Secretary's report . . .

### DELTA TAU ALPHA CONVENTION 1964

Monroe Rasnake  
National Secretary  
Berea College

The Fifth Annual National Convention of the Honor Society of Delta Tau Alpha, held on the campus of Sam Houston State Teachers Col-

lege in Huntsville, Texas, April 5-7, 1964 proved to be very interesting and productive. Since all eleven member colleges were represented, only a brief summary of the business transactions will be given.

#### New business:

1. A workshop was suggested in which different DTA chapters would present a program on how their chapter carries on their work, how it is financed, etc. at the next DTA National Convention. This workshop is now being planned by members of the National Council.
2. The newly elected National Secretary was designated to design membership certificates for honorary members and past members of the National Council. These will be drafted and mailed to each member of the National Council for approval.
3. Photographs were made of the Delegate Body and the National Council and paid for by the National Treasury.

#### Old Business:

1. The delegation agreed to accept Wilmington College's invitation to hold the 1965 National Convention in Wilmington, Ohio.
2. Travel expenses of two cents per air mile were approved and paid to the delegate from each local chapter by the National Executive Treasurer. This is the first year the travel fund has been in use.
3. National officers for the year 1964-65 were then elected as follows:  
President, Kenneth E. Webb, Ohio University; Vice-President, Mike Ray Black, Abilene Christian College; Secretary, Monroe Rasnake, Berea College; National Executive Adviser, Prof. J. A. Chandler, Sam Houston State Teachers College; National Executive Treasurer, Prof. J. N. Smith, Southwest Missouri State College.

Probably the best single aspect of the entertainment program was the boat trip down the Houston Channel. This included 15 miles of boat docks, factories, and processing plants. Ships from all over the world were loading and unloading cargo at the many different docks. For those who had never even seen a large ship (and even most who had) this proved to be a very inspiring trip.

The tour of the campus of Sam Houston State the next afternoon also proved to be very

interesting. Some of the highlights were the Science Building with its Planetarium and calculating machines; the Ag. Lab and meat-cutting class; the Sam Houston Museum and the Sam Houston home.

The Sam Houston State Teachers College DTA Chapter and Agricultural Staff should be commended for the fine program which they arranged for this National Convention. It combined recreation with education in a way that is hard to beat. It should serve as a challenge to those of us who will be acting as host for the National Convention in the future. I am looking forward to the next National Convention in Wilmington, Ohio which I am sure will be as good as this one has been.

From DTA National Advisor . . .

ELEVEN MORE IN '64

J. A. Chandler

Sam Houston State College

Our slogan in Delta Tau Alpha could well be "Eleven more in '64", meaning eleven new chapters of DTA. We would not want you to believe we are interested in numbers only. A National Honor Society should be concerned with academic accomplishments first and numbers second.

It is my sincere hope that each delegate and visitor to the National Convention returned to his home chapter with the inspiration to better accomplish the objectives of DTA. We, as members, should concern ourselves with high standards of scholarship, leadership and character. These are not mere words but should become a part of our way of life and should be recognizable by our fellow man. When we have accomplished these three objectives, others will want to be a part of this organization.

Eleven chapters, which represent one hundred and eighty-two students enrolled in Agriculture, have accomplished these objectives. Now other institutions of higher learning with outstanding students want to be a part of the national organization. May we congratulate Delaware Valley College, Doylestown, Pennsylvania for being the first to request information for establishing a new chapter. Will your school be second? Our goal of "Eleven more in '64" can be accomplished if each chapter will sell DTA to another school during the year. When we meet in Ohio in 1965, let us be prepared to issue eleven new charters.

As your new National Adviser, I should like to say to all DTA members and to NACTA, "I consider it an honor and privilege to serve you. With your help, guidance and continued support we can meet the many challenges that will come our way."

## BEREA DELEGATION MAKE TRIP IN HEARSE

At 3 a.m. on the 3rd of April, 5 members of the Berea College Agriculture Honorary Society, Delta Tau Alpha and their advisor began a 1002 mile trip to S. H. State College at Huntsville, Texas, the site of the National Convention of the Delta Tau Alpha and of the National Association of Colleges and Teachers of Agriculture. One unusual aspect of the trip was that it was to be undertaken in a 1941 Pontiac Hearse. The plan was to drive through without stopping except for fuel and rest stops, and to camp out while at the convention.

The food supply at the beginning of the trip consisted of 15 dozen eggs and 24 pounds of baked turkey. Additional groceries were to be purchased during the journey. Camping supplies consisted of a 3-room tent, sleeping bags, gas stove and lantern, cooking utensils, and blankets, all of which were borrowed.

They drove across Tennessee and Alabama to the Natchez Trace to Jackson, Mississippi, then crossed the Mississippi River at Vicksburg, and westward across Louisiana to Huntsville, Texas which is 60 miles north of Houston. They arrived at 6 o'clock Sunday morning and set up camp in the Huntsville State Park where modern boating, swimming, and bathroom facilities were available.

After meeting Sunday night and Monday morning, the entire delegation took a guided tour down the Houston Channel to the Sam Houston State Park. They were served a sea-food dinner in the famous San Jacinto Inn.

Breakfast was served Tuesday morning at the Lowman Student Center of the Sam Houston State Teachers College. The business consisted of new business and election of National Officers. Monroe Rasnake, Berea's nominee for National Secretary of Delta Tau Alpha, was elected. The convention ended with a meeting and banquet Tuesday night.

The group started back to Berea at 8 a.m. Wednesday morning and arrived there at 2 p.m. Thursday. The total cost for food including camp supplies and other meals was \$45.64. Two of the most expensive meals cost a total of \$23.45. The trip was financed by growing and selling veal calves and a turkey shoot.

The delegation included: Clyde Lewis, Agriculture Professor, Bart Baker, Ira Lindville, Jr., Monroe Rasnake, Ray Reneau and Harold Brown.

that there is a place for non-degree programs in agriculture in the United States. Some look upon these as an inferior kind of education. I would disagree for, as I have stated before, not all people are adapted to, or motivated toward, a college level education. In fact, one of the most damaging things that can happen to a young person, in my opinion, is to force him into a program which is not well suited to his interests or talents.

The foregoing remarks are an effort to pull together some of the problems which I think the colleges and schools of agriculture are confronted with today in the general area of education for rural youth. I have by no means exhausted all of the possibilities for encouraging more young people to continue their education, but I would hope that these ideas, none of which is too original, might stimulate further discussion among you.

#### Observations on Undergraduate Education in Agriculture

It is my purpose to turn now to some observations on undergraduate education and programs leading to the B. S. degree in agriculture. Here I should like to review a series of questions which have come up as I have visited various colleges during the past year. As I indicated at the beginning, we do not have definitive answers at this point, and perhaps we never shall, but I think the questions are pertinent ones for any review or study of agricultural education.

**First**, in a discussion with several faculty members and administrators at a land-grant college, I encountered the belief that there should be a heavy emphasis upon technical agriculture in the first two years of the college curriculum, primarily because many students terminated their education at the end of the first or second year. The college felt that it should provide such students with some usable knowledge and skills even though they were unable to complete a B.S. degree program.

Along similar lines, I have encountered situations in which two young men, one with a B.S. degree and one completing a 2-year technical program, were in direct competition for the same job. The question which such a situation creates in my mind is this: Can one successfully combine in an undergraduate program leading to a B.S. degree the technical training required for sub-professional jobs and the education required for professional jobs in agriculture?

**Second**, in colleges that I have visited with major graduate programs in agriculture, I have talked with department chairman about the students who come to them from a variety of institutions across the land. I find that the completion of the B.S. degree in itself gives little indication of subject matter competence. Students may come to graduate school with a whole range of competencies. Some may be able to move directly into graduate work; others may spend as much as a year taking course work which is essentially pegged at the freshman or sophomore level, making up fundamental deficiencies.

particularly in the basic sciences and mathematics. Yet all of these young men or women possess a bachelor of science degree in agriculture. The question which this situation raises in my mind is this: Is there not some way of defining the subject matter competence which a student who is granted a B.S. degree should master, regardless of the institution at which he has been enrolled?

**Third**, in many discussions with agricultural faculty and administrators, I frequently hear reference to the "products" which are being turned out in the undergraduate program. I am disturbed by this term in several ways. It seems to me that it is impossible to "produce" an educated man in a 4-year period of time. All we can really do in this time is to give an individual the tools by which he can further his own education in the future—the capacity to read, to write, to analyze.

I am also bothered by the idea, implicit in the term "product," that we are preparing students only for specific jobs or tasks, and quite probably for the first job. The question which I would raise is 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 life time.

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. 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.

**Fourth**, I frequently hear discussion about how much basic science the undergraduate should take in an agricultural education. I recall talking with one faculty member recently who expressed his fear that the colleges of agriculture in the United States would move too far in the direction of turning out scientists and retreat from the position of educating men who are willing to go to work. I find this dichotomy a little difficult to accept, but I think I understand the situation which gives rise to the question.

Certainly, there has been a move toward increasing greatly the requirements in the natural sciences and mathematics for agricultural graduates. In many places there is some unhappiness about this. Yet ours is a society of rapidly changing technology and of increasing occupational mobility, as anyone familiar with American agriculture well knows. Do not such conditions demand that the student be exposed as much as possible to the fundamental principles of science, ones which will serve him, as he seeks to adapt to new situations throughout a professional life of 40 years or more? Indeed, we can only short-

change the student and delude him into false security if we tell him that subject matter which is difficult, and which he thinks he does not like or will never need, is something which he does not have to master.

**Fifth**, I frequently encounter questions about the relevance of the social sciences and humanities for agricultural education. In fact, one individual recently asked me whether this was not the kind of knowledge which a student should acquire in high school or wholly on his own after he has been graduated from college. My answer to this would be that I would wish that the high schools did a somewhat more solid job of education in the social sciences and humanities, and I would certainly hope that a man with a B.S. degree would continue to learn in these areas throughout life. But I think that I am realistic enough to appreciate that some exposure to knowledge in these areas in college can be useful, not only in broadening and developing interests intellectually, but also in the professional career.

Let me cite some reasons why these are important fields. **First**, the more a student comes up against good literature and good writing, the more his own writing and speech should improve. If what I am told in most colleges about the limited mastery of English grammar and reading habits among agricultural students is even only partially true, then most certainly we need to improve the student's use of his own language. **Second**, business leaders in agriculture to whom I have talked stress that new employees are weak in their understanding of the economic system within which they live and work. They apparently believe that more study in the principles of economics and the economics of the individual enterprise would be helpful for the long run professional development of the agricultural graduate. **Third**, as a political scientist, I have encountered a good many civil servants engaged in agricultural or natural resources work who have only a limited understanding of the political and public administrative systems in which they operate. Yet, policy and administration are as much a part of their job as is technology. Thus, both the social sciences and humanities have, in my opinion, a direct bearing upon professional life.

**Finally**, I encounter considerable debate about the amount of specialization that a student should have as an undergraduate. This is a particularly thorny question today, as one seeks to add up the amount of time that is coming to be devoted to the basic natural sciences, mathematics, social sciences, and humanities. How much can we offer in these areas and still give a sound technological education in agriculture? I am by no means sure of the answer to this question, and I have certainly heard a wide variety of answers as I have moved around the country. I am impressed, however, by the belief of a good many people, both in education and business, that it is difficult to educate a truly professional specialist in 4 years. I believe that an under-

graduate program can be designed so that a student can receive depth and intellectual discipline in one agricultural technology, and its supporting fields, and at the same time receive an adequate grounding in the basic sciences, social sciences, and humanities. Quite probably, however, colleges of agriculture, like those of engineering and business, and more recently forestry, could review to good advantage the role which study in a fifth year or at the master's degree level should play in educating the true specialists and professional men in agriculture.

#### Summary:

Each of the questions which I have raised here is concerned with the underlying problem with which every educator is plagued, in agriculture or any other field of knowledge: What is the basic purpose of the undergraduate program? As one who had only a fleeting knowledge of agricultural colleges and teaching programs prior to last April, I have been impressed by the amount of free discussion and searching for educational objectives which has been going on in the colleges in recent years. I have also been impressed by the great amount of change which has taken place in agricultural education. Moreover, I am convinced that if the agricultural revolution continues at the pace that it has in the past two decades, educational programs will have to continue to change rapidly to keep abreast of the current situation.

I have also been impressed by the fact that most of the questions that I have encountered in the course of this Study are ones that I have met at some other point in my life, either as a political scientist or administrator. Agricultural colleges are relatively unique, I think, in the extent to which they seek to relate abstraction to reality in the world of the natural and social sciences, and this is something that must be preserved above all else.

But an agricultural college is also part of a total educational system, and its ultimate purpose, like all education, is to help young men and women develop their intellectual capacities — that is, the capacities to think systematically—so that they may lead useful lives personally, professionally, and socially. The professor of agronomy and the professor of English; the professor of dairy science and the professor of chemistry—all are engaged in the same process. I would hope that in looking to the future of agricultural education, all of us can see that we are concerned with the intellectual capacity of the individual, and that the educated man in agriculture, as elsewhere, is one who has a fully developed capacity to understand relationships in the world around him, to diagnose problems, and to reason out their solution.