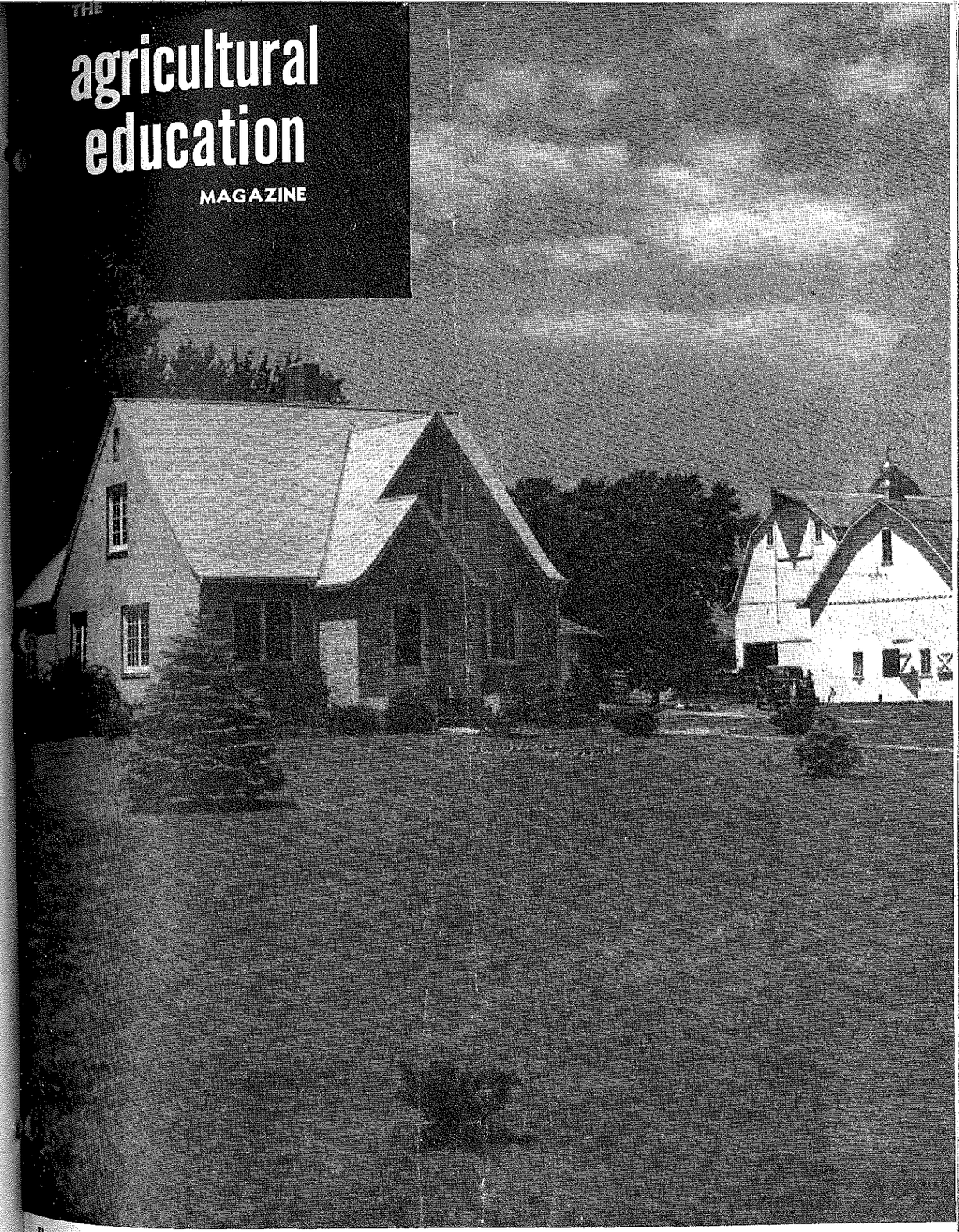
THE

agricultural education

MAGAZINE



There is not a modern convenience enjoyed by urban families that cannot be made available to farm families in the open country—Paul W. Chapman

SEPTEMBER, 1947
VOL. 20
NUMBER 3

The Agricultural Education Magazine

A monthly magazine for teachers of agriculture. Managed by an editorial board chosen by the Agricultural Section of the American Vocational Association and published at cost by Successful Farming at Des Moines, Iowa.

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Subscription price, $1 per year, payable at the office of the Meredith Publishing Company, Des Moines 3, Iowa. Foreign subscriptions, $1.25. Single copies, 10 cents. In submitting subscriptions, designate by appropriate symbols new subscribers, renewals, and changes in address. Contributions should be sent to the Special Editors or to the Editor. No advertising is accepted.

Entered as second-class matter January 21, 1929, under Act of Congress, March 3, 1879, at the post office, Des Moines, Iowa.

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Editorial Comment

Rebuilding teacher-training

H. B. Swanson

PROBABLY no aspect of vocational education suffered more seriously as a result of the war than did the program for training teachers of vocational agriculture. From the inception of the program until the middle thirties vocational agriculture represented a teacher-shortage field. By the start of World War II, teacher-training programs had developed to the point that approximately 2,000 new teachers per year were being trained with this number being slightly in excess of the placement need. This number dropped to approximately 100 as a low during the last of the war years.

Established departments of vocational agriculture dropped from slightly over 9,000 to about 6,800. From a maximum of 9,050 teachers, 6,971 employed teachers left the work during the four war years to enter the armed services, other agricultural agencies, war industries, and farming. Agricultural college enrollments, the source of new teachers of vocational agriculture, dropped to approximately 10 percent of their peak enrollments immediately preceding the war.

While many teacher-training institutions retained the machinery for training teachers during the war period, there were some that discontinued pre-employment training entirely. Hence it is fitting that the training of teachers of vocational agriculture be featured in this issue of *The Agricultural Education Magazine*. Teacher-training is in the process of rebuilding. Unprecedented is the demand for new teachers. Teachers are needed to restaff departments closed during the war period. Teachers are needed to replace emergency persons used in considerable numbers merely to keep departments open. Additional teachers are needed in many departments to make possible complete programs of agricultural instruction to include provision for all-day, young-farmer, and adult-farmer classes. Teachers are needed for the expansion of the program which could not expand normally during the war years. And last, teachers are needed for the rapidly expanded institution-on-farm training programs that have attracted huge numbers of returned veterans.

Directed Teaching Emphasized

In the rebuilding of pre-employment teacher-training programs in agriculture, two training aspects are recognized—(1) resident courses and (2) directed teaching. With no intent to minimize the importance of resident teacher-training, the balance of this editorial relates to the directed teaching aspect which is the heart of the training program and corresponds to supervised farming in vocational agriculture. In the redevelopment of directed teaching programs the following analysis is important.

1. Directed teaching centers used for pre-employment training thruout the nation dropped from 400 to a low of 136 in point of number. Personnel have been lost or deteriorated from lack of use during the war period and centers have deteriorated markedly from 36.6 percent having complete programs of all-day, young-farmer, and adult-farmer classes to approximately 4 percent having complete programs.

2. There is need to redevelop new centers for supervised teaching in point of number from a low of the 136 used in 1945 to approximately 500.

3. Directed teaching centers should be removed from the college community and provide a full-time experience for the trainee of not less than nine weeks with a full quarter or a full semester considered preferable.

4. Directed teaching should have complete programs of all-day, young-farmer, adult, and veterans classes, together with facilities such as a well-equipped farm shop, F.F.A. chapter, and those other facilities considered essential to the program of work in each of the respective states.

Two Trainees per Center

5. Not more than two trainees should be assigned to a center at a given time and not more than four trainees to any given center per year.

6. A one-week workshop should be organized by the state supervisor and the teacher-trainer to be held at the earliest opportunity in each state or in groups of states for the purpose of preparing supervising teachers to function effectively in this important phase of training. Specific participating experiences for trainees should be identified and provision made that each trainee become skilled in the activities selected.

7. State supervisors and teacher-trainers should make the directed teaching centers a primary responsibility from the standpoint of follow-up and supervision to insure their full and complete functioning. No other single activity promises more for the development of the program in each state than does the character and the amount of participating experience afforded trainees. The trainee has every reason to believe that what he sees in the directed teaching center represents vocational agriculture at its best and exemplifies what he should attempt as a teacher. It should be the first duty of supervisors and teacher-trainers to insure that centers for directed teaching be selected carefully and that they have in operation all aspects of a complete program.—H. B. Swanson, U. S. Office of Education.

New series for professional section

The special editors for the professional section—S. S. Sutherland and B. C. Lawson—are initiating a series of articles pertaining to the *role of vocational education in present-day farming*. The preliminary plans call for two introductory articles, followed by contributions dealing with pre-service and in-service training, administration and supervision, and case reports of teachers at work.

The new series will be somewhat comparable to the three series featured in previous years and reprinted under the captions of "Contributions of Ten Leading Americans to Education," "Contributions of Leading Americans to Agriculture," and "Whither Agricultural Education?"

Article by Dean Chapman

As a background for the series, Dr. Paul W. Chapman, Dean, College of Agriculture, University of Georgia, prepared the article entitled *Farm Life—Today and Tomorrow*, which appears in this issue. Aside from his present responsibilities, Paul Chapman has a background of experience which qualifies him to write with authority on the designated topic. He has held positions as teacher and administrator in public schools, as state supervisor of vocational agriculture in Missouri and Georgia, and as state director of voactional education in Georgia. While in the latter position, he served for a time as president of the American Vocational Association.

Doctor Chapman's first professional assignment at the University of Georgia was that of Professor of Rural Journalism. His article appearing in this issue on page 50 bears evidence of that experience.

The cadet system of student teaching in vocational agriculture

S. S. Sutherland, Teacher Education, College of Agriculture, Davis, California

CALIFORNIA has used a cadet system in the pre-service training of teachers of vocational agriculture since 1927, and the analysis presented in this article is based on some 20 years' experience with this method. Out of this experience has evolved the present cadet program as provided for in the 1947-52 State Plan and which operates as follows:

S. S. Sutherland

1. *Selection of trainees.* The number of men to be trained each year is determined in advance by the state supervisor and his staff and is dependent on the estimated need for teachers and the number of desirable applicants. Trainees are given cadet appointments upon the recommendation of the teacher-trainer and the state supervisor or a member of his supervisory staff. Trainees make formal application for these appointments and must meet following minimum standards:

(a) Graduation from an approved four-year college of agriculture.

(b) The completion of 60 semester units of technical agriculture distributed approximately as follows:

Animal Production courses	15-20 units
Plant Production courses	15-20 "
Agricultural Engineering	8-10 "
Agricultural Economics	6-10 "

(c) A minimum of three years of practical farm experience.

2. *Length of training period.* A minimum of six months including at least one summer month is provided for under the new State Plan. Varying lengths of training programs have been tried—3, 6, 9, and 10 months. Present plans call for training two cadet groups yearly, one in training from July 1 to December 31, the second from February 1 to July 31. This brings two groups together for the period July 1 to 31 each year.

3. *Instruction and training provided.* One month (July) of intensive instruction in professional methods and technical skills and five months of full-time directed observation and teaching in one center comprise the training program. The month of intensive instruction is devoted to professional and "skills" training with about equal emphasis to each. Trainees devote eight hours each day to organized classwork dealing directly with the teaching of vocational agriculture. In addition to the teacher-trainers, every member of the supervisory staff acts as an instructor and is responsible for some phase of the instruction. Trainees plan teaching units and use their plans in teaching other trainees, and much of the skills are therefore self-taught. This month of instruction is held at the California Polytechnic, where housing for trainees, staff members, and facilities for instruction are readily available.

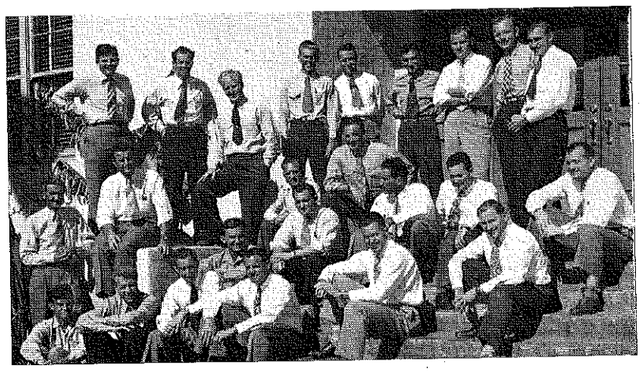
During the period of observation and teaching, each trainee is assigned approximately a half-time teaching load. It is recommended that a short period of observation be provided before the trainee takes over his classes, and that he be inducted into his teaching duties gradually. Toward the close of his training period, provision is made for the trainee to take over the entire job of the supervising teacher for a period of approximately one week to give him the "feel" of a full-time job. Often the supervising teacher leaves the community entirely during this week, and utilizes this time for his own professional improvement by visiting other departments. Trainees are required also to spend a certain amount of time visiting nearby departments and observing the procedures used by other schools. They also attend district and regional meetings scheduled for employed teachers.

While the training received during the five months' directed teaching period is largely thru observation and participation, this is supplemented by supervision and individual instruction by the teacher-trainer and by regularly scheduled class meetings and conferences. Trainees receive an average of about two hours per week of organized instruction during the directed teaching period, generally thru all-day meetings scheduled once a month.

Each trainee keeps a daily diary of training activities, which he submits to the teacher-trainer in the form of a weekly report. This covers all-day, young-farmer, adult, and veterans classes taught and observed, farm visits for supervision, meetings attended, special subjects studied.

Supervising teachers make reports periodically on a standard form to the teacher-trainer regarding the progress being made by trainees under their supervision.

4. *Financial arrangements.* Trainees receive official cadet appointments as employees of the State Department of Education. They are employed on a month-to-month basis, with their continuance in service dependent upon their making satisfactory progress, and are subject to dismissal at any time if they prove unsatisfactory. They receive $75 per month while in training, and since they are enrolled as graduate students in the university, veterans are entitled to subsistence and other educational benefits under the G.I. Bill.



The first postwar group of cadet teachers (1946) and teacher-trainer take time out for an informal picture during their month of intensive instruction

Schools Pay Travel Expenses

Since cooperating schools receive essentially the services of a half-time teacher at no cost to them for salaries, each school is expected to pay the necessary travel expenses of the trainees assigned to it and this includes travel expenses to class meetings and conferences as well as for travel within the district.

At present, supervising teachers do not receive extra compensation for this work with trainees. In general they seem to feel that the extra assistance they receive from having trainees in their departments is compensation for any extra duties involved.

5. *Enrollment and credit.* Trainees apply for admission to the graduate division of the university and are enrolled as graduate students for one semester and two summer sessions. They enroll for and receive credit in 24 units of upper division and professional course work. Eight of these units are given for directed teaching, nine for directed individual study, and six for organized classwork, all given for work done in absentia.

6. *Relation to graduate study for advanced degrees.* Only 15 units of the course work which trainees complete is required for the special credential in vocational agriculture which each is awarded upon successful completion of the training program. The additional nine units may apply either toward the general credential, which entitles the holder to teach other general school subjects or toward the requirements of the master of education degree with a specialization in agricultural education. Trainees whose records qualify them for advanced study may complete the requirements for the master's degree with approximately one semester or three summer sessions additional study.

7. *Placement and follow-up.* Placement is conducted entirely by the state supervisor and members of the supervisory staff rather than by the teacher-trainers. Placement folders are compiled for each trainee by the teacher-training department and placed in the hands of the state supervisor for use in placement.

Arrangements are made for the regular supervisory staff to give special attention to new teachers during their first year, and where more assistance is needed, provision is made for the teacher-trainer to visit them and work with them over a several-day period. Supervisors are also requested to report to the teacher-trainer on the progress of new teachers.

Characteristics of Cadet System

The distinguishing characteristics of the cadet system conducted in a fifth year as contrasted with a purely institutional training program are as follows:

1. The undergraduate training is devoted almost entirely to preparation in technical agriculture and related subjects, with only a bare minimum of professional instruction.

2. Trainees entering the cadet program are carefully selected and are actually employed and paid as apprentice or probationary teachers.

3. The number of trainees enrolled is limited and is based on the expected demand for teachers.

4. It is a cooperative program between the State Department of Education and the teacher-training institution utilizing the facilities and staff of both agencies.

5. It places a relatively large emphasis on training thru participation rather than upon observation and formal instruction.

6. The status of the trainee is that of a teacher rather than that of a student. He is employed as an apprentice and removed almost entirely from the student influences of the campus.

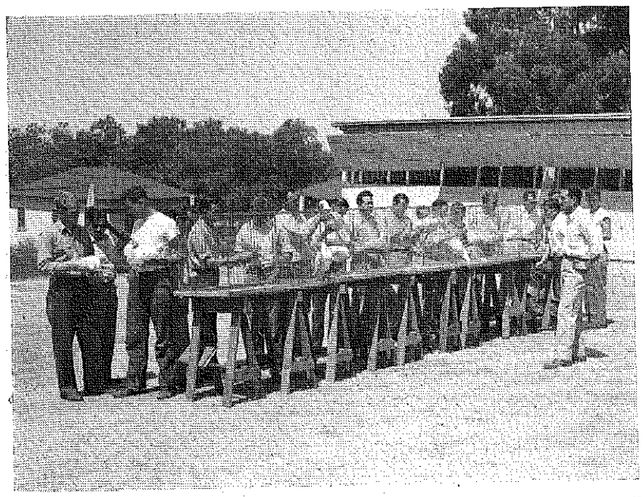
7. Considerable responsibility for the effectiveness of the program rests upon the supervising teacher.

8. It provides a transition period for the trainee between his status as a student and that of a regularly employed teacher.

9. It requires that training centers be selected with extreme care in order to insure participating experience in a complete program and in the right kind of activities with each phase of a complete program.

10. Somewhat more responsibility is placed upon the individual trainee for securing the training and experience which he needs.

The advantages and limitations of a postgraduate cadet or apprentice system of training are rather self-evident and it is not within the province of this article to discuss them. It is not a "cure-all," and doubtless the perfect system of training teachers of vocational agriculture has yet to be devised. However, for the conditions in California, it has proved satisfactory, and the increased complexity and difficulty of the job of the teacher of agriculture seems to indicate that it may be increasingly necessary or at least desirable to extend the pre-service program in other states beyond the usual four years.



Cadet Charles Solomon teaches his fellow trainees how to handle birds and to cull for production at California Polytechnic

Louisiana apprentice teaching program

D. C. Lavergne, State Supervisor, Baton Rouge

IN THE development of a comprehensive program of vocational education in agriculture, the aptitudes and ability of the teacher are of major significance. Therefore, it behooves each state to prepare prospective teachers of agriculture capable of meeting the challenge of preparing farm youth and adults for greater vocational competency.

D. C. Lavergne

The problem of training men to become efficient and reliable teachers of vocational agriculture has many detailed ramifications. The requirements of the job and the state standards for certification of teachers, as well as the difference in procedures among institutions, can greatly affect the finished product. There are, of course, certain fundamental characteristics of a good program. These might be classified as: (1) The selection of the students to be trained, (2) the content of the training program, (3) the institutional conditions favorable for the operation of efficient training centers.

There is general agreement that men selected for training in this field should be the most capable individuals available. We have long applied this formula in the selection of prospective teachers.

Adjustments in Technical Courses

Sometime ago, an examination of the title and content of the technical courses offered to prospective teachers of vocational agriculture in Louisiana institutions indicated that there was a lack of balance among those areas which might be considered applicable to present-day conditions. It was agreed that the five major areas among which technical courses in agriculture might be distributed, are as follows:

(1) Plant studies
(2) Livestock studies
(3) Farm machinery
(4) Farm mechanics
(5) Directed electives.

After conferences with heads of the technical departments, teacher-trainer staff members, and supervisors, it was agreed that adjustments were necessary. Such adjustments have been started and a more balanced offering is being developed in order to give the prospective teachers the training and experience which we all felt would contribute most to their development as teachers.

Developmental Centers

In arranging for practice teaching experience for trainees, it has been the custom in the past, to select certain schools for observation and apprentice teaching. Experience has generally been recognized by all as a determining factor in the future success of teachers. Since this phase of training is of such importance, the teacher-training institutions, in cooperation with the State Department of Education, have designated a number of more or less permanent developmental centers. The term "developmental centers" is used deliberately. These departments will be used as practice-teaching centers. The teachers employed there are considered part-time

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The program of apprentice teaching at the University of Georgia

R. H. Tolbert, Teacher Education, University of Georgia, Athens

R. H. Tolbert

THE program of apprentice teaching at the University of Georgia is one of the most important aspects in the training of prospective teachers of vocational agriculture. At the end of his apprentice period recently one senior said, "This apprenticeship has been the most valuable part of my training program, and has been invaluable in my preparation to teach. When I went to the apprentice center, I felt that apprentice work was just another requirement to be met for my degree. I intended, therefore, to get thru it as best I could so as to qualify to teach. Now I think that the training period should be doubled."

Records show that the 1918 Georgia State Plan for Vocational Education provided for apprenticeship training of teachers of agriculture. However, during the next 10 years, it was difficult to get an appreciable number of trainees away from the college campus for more than a week. In other words for 10 years after plans had been made, apprenticeship did not become effective. In July, 1929, the following progress report on apprenticeship was made: "The college curriculum has been so adjusted that all technical and science (degree) requirements of the institution may be met by prospective teachers by the end of the junior year. Several technical departments have cooperated in adjusting their courses so that those who have met the general college (degree) requirements may take term courses of 12 weeks each instead of continuous semester or year courses. These two adjustments, while far from being ideal, make it possible for seniors in the teacher-training department to give one term of at least 12 weeks to apprenticeship practices."[1]

Full Quarter Used

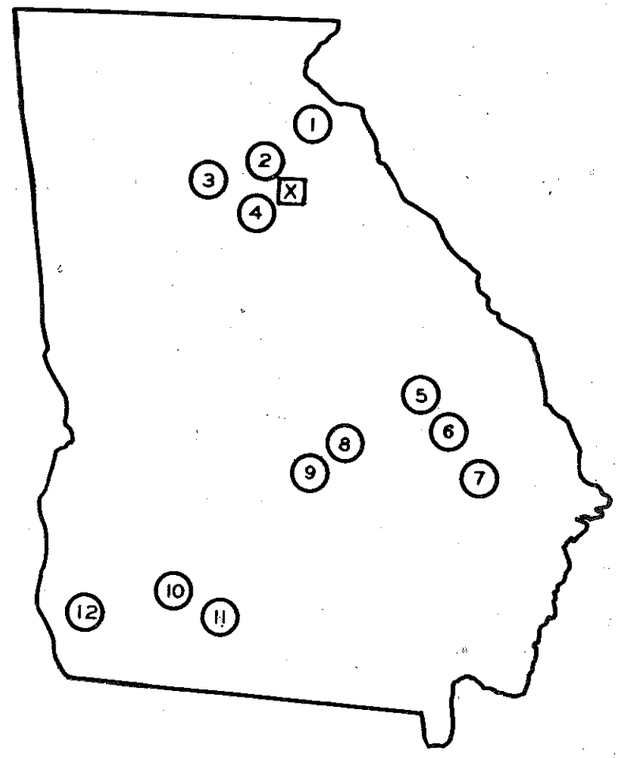
Since 1929 the University of Georgia has gone to the quarter system and one full quarter is now devoted to the apprentice work by the trainee during his senior year. The fall, winter, and spring quarters have been used in the apprentice program. However, the fall and winter quarters have been found to be more desirable than the spring quarter, due to the fact that the spring quarter provides less opportunity for holding adult classes, as well as less time for conducting all-day classes before school closes in the spring.

Teacher-trainers in Georgia have learned that the most important factors in a successful apprentice experience are the kind of school in which the experience is obtained and the kind of supervising teacher under whom the work is done.

When a new apprentice center is needed in a given area the supervisor is asked to recommend two or more centers, which, in his opinion, most nearly meet the conditions for good apprentice practice. The schools are then visited and studied by a member of the teacher-training staff. A center is selected after each of the schools has been evaluated, and the interest of the administrators and the teacher of agriculture in a program of apprentice training has been determined. The following criteria are used in selecting centers:

1. The total school program provides favorable conditions for good teaching.
2. The school administrators are actively interested in the school's program of vocational agriculture, and are willing to cooperate with the University in a program of apprentice training.
3. The teacher of agriculture has a satisfactory relationship with the other teachers in the school.
4. The teacher of agriculture has had at least three years of teaching experience in the given school, and has demonstrated superior ability as a teacher and community leader.
5. The teacher of agriculture has demonstrated that he is vitally interested in professional growth and program development.
6. The department of vocational agriculture is adequately equipped with facilities for meeting the instructional needs of the farmers and farm boys of the community.
7. The community served by the school contains two or more centers with satisfactory places for holding adult class meetings.
8. An effective program in organized instruction is being carried on with high-school boys, adult farmers, and young farmer or veteran farm training groups.
9. The school is near enough to other apprentice centers already in use as not to increase greatly the cost of travel in apprentice supervision. However, the center is far enough away from the University campus as to cause apprentices to be outside of the influence of campus activities.
10. The farming type of the school community is representative of the land-use area in which the school is located.
11. There is evidence that the people of the community are interested in the development of a good school program.
12. Desirable living conditions are available at a reasonable cost.

Apprentice centers are generally located in the different supervisory districts of the state as determined by the number of trainees and the areas of the state from which they come. In most cases, apprentices are sent to the land-use area of the state in which they were reared, so that they have a better opportunity to understand the people and their farm problems. At present no center is located nearer the University campus than 18 miles.



Apprentice teaching centers in Georgia, 1946-1947 (x) University of Georgia, (1) Lavonia, (2) Jefferson, (3) Duluth, (4) Social Circle, (5) Graymont, (6) Metter, (7) Claxton, (8) Rentz, (9) Rhine, (10) Camilla, (11) Moultrie, (12) Colquitt

[1] *Apprentice Practice In Training Teachers of Vocational Agriculture*, Dr. John T. Wheeler, University of Georgia, 1930. Agriculture College Bulletin 378.

About a month before the beginning of the quarter in which apprentice work is to be done the trainees are assigned to centers in pairs. Experience with apprentice work in Georgia has shown that trainees profit much from their association with one another in the various experiences. Placing apprentices in pairs also reduces the number of centers needed as well as the cost of supervising apprentice practice.

At the end of the quarter before doing apprentice work the trainee registers with the University for the three courses in education set up in the catalog as apprentice courses. These three courses comprise a normal course load for the quarter. Thruout the quarter, the student lives in the community of the apprentice center as a teacher in the school without having to go to the University campus at all.

Many worthwhile experiences are provided for the trainees in apprenticeship. The two big responsibilities of the apprentice in the school are those of teaching one all-day class for the quarter, and organizing and teaching one adult class. Other experiences provided are those of making community and school adjustments and participating in F.F.A. and other activities of the teacher of agriculture.

Assigned Definite Responsibilities

Soon after the apprentice reaches the center, a group of boys whom he will have in class is assigned to him. For the first few days, it becomes his responsibility to observe the supervising teacher in his classroom and other activities during the school day. After school, the apprentice makes a series of visits to the farms of the boys in his all-day class to get acquainted, to study the farms, and to set up practice programs (if practice programs have not already been set up). As soon as he has visited each farm enough to know the farm and the boy's practice program, he takes over complete responsibility for carrying on the instructional program of the class under the supervision of the teacher. This involves leading the group in setting up course calendars for the quarter, planning for teaching the jobs to be taught, teaching, and following up his instruction.

Early in the apprentice period, an adult-farmer class center is assigned to each trainee. As soon as the instructional program of the all-day class gets under way and the trainee "gets the feel" of all-day teaching, he begins to visit the farmers of the evening class center and to make plans for conducting an evening class to deal with seasonal farm problems faced by the farmers and in which they are interested. The apprentice assumes full responsibility for teaching the evening class and for following up his instruction.

Thruout the apprentice period, the

(Continued on page 55)

Those intangible values

R.W. Canada, Teacher Education, Colorado A & M College, Fort Collins

R. W. Canada

THE development of prospective teachers of vocational agriculture embraces more than introducing them to educational theories and methods, in absorbing facts and principles of technical agriculture, of the attempt to inculcate right pedagogical habits.

Teachers and administrators have remarked frequently that teachers of vocational agriculture are the most professional and tightly knit group in the teaching field. Further, that teachers of vocational agriculture believe in themselves and their work, and drive forward with a common purpose in developing programs of vocational agriculture to a degree attained by no other group in the teaching profession. If this is true, it is obvious that numerous forces have been at work in bringing about this professional spirit and zeal. Certainly, their common rural background and farming experiences have helped in fostering a kindred spirit among the men. Their college experiences also help promote and develop more intimate acquaintances and closer relationships among the men. Organizations such as the Alpha Tau Alpha, national professional and honorary society in agricultural education, the collegiate F.F.A. chapters, and the various "Ag. Ed." clubs, can play their part in developing common philosophies, ideals, and a fraternal spirit of helpfulness and service among the group.

Recently the writer had the unique satisfaction and pleasure of seeing many of the forces mentioned in full play during an overnight trip and get-together at Estes Park, Colorado. Upon completion of the directed teaching period and the return of the men to the campus, it was suggested by several that the group should meet at the family cabin of one of the members along the Big Thompson River in Estes Park, to review their directed teaching experiences. The suggestion was enthusiastically adopted by the group. Accordingly, all supervising teachers were invited. Committees were appointed to arrange for the program, food, and entertainment.

All gathered by 5 o'clock on a Friday evening before the great fireplace at the Mattoon cabin. A weiner roast with all the trimmings was first on the program. After this, the group assembled on the large porch overhanging the steep walls of the Big Thompson canyon and sang songs until 8:30 p.m.

The program came next. A program that was planned to run 1½ hours was still in progress at 12:30 a.m. Each trainee reported on his student-teaching experiences. In turn, the supervising teachers made their contributions. Herb Heilig, director of vocational education at Colorado A & M College, made his usual sage, philosophical remarks. Plans for the coming year were then discussed, and this held the group's interest for fully an hour. Many worthwhile suggestions were made by the trainees as to future improvements that might be made in the general agriculture curriculum in order to better prepare the succeeding trainees.

The president of the Alpha Tau Alpha directed the evening's activities, and the entire program was conducted in a very educational and professional manner.

About 1 a.m. sleeping bags, army cots, and bed rolls were set up and the kerosene and gasoline lanterns turned out. The next morning, after a real bachelor's breakfast, all returned to Fort Collins with the feeling that the overnight trip was well spent in professional fellowship and that the evening would linger a lifetime in the memory of all present.

Trainees at Colorado A & M College combine trip to Estes Park with professional discussion of student teaching experiences

Needed improvement in participation training*

C. E. Rhoad, Teacher Education, The Ohio State University, Columbus, Ohio

C. E. Rhoad

THE "learning by doing" phase of the professional education of our teachers of vocational agriculture is what we call "practice teaching." This part of our program extends or nullifies the acceptance of the general principles dealt with in our campus courses.

I. Provide Better Qualified Supervising Teachers

As each local department of vocational agriculture is the "shadow of the teacher" so it is with our training centers. Since attitudes and ideals as well as skills and understandings are "caught" as well as "taught," the supervising teacher is the key to the efficiency of the participation training.

Graduate Work—In the North Central Region, before the war, one-third of the supervising teachers had no graduate work while only one-third had their master degrees. A common malpractice is to appoint a supervising teacher and expect him to work out his master's degree while carrying the "load and a half" in the training center. These men should be expected to do some graduate work out of their home state in order to gain perspective and bring home new ideas.

The pursuing of advanced study is one of the chief indications of that professional interest which characterizes the good supervising teacher.

Teaching Experience—A minimum of three years and an optimum of five years of actual teaching experience are essential if the supervising teacher is to be able to teach others to do his job.

Staff Rank—The supervising teachers are a real part of the teacher-training staff. They should be so recognized and made to feel that they "belong." They should help plan the whole teacher-training program.

Salary—Let us set high standards and pay the men who meet them! The local school board should expect to pay a top vocational agriculture salary to the critic teacher. The college should add to this enough to bring the total salary on a par with salaries of the regular resident staff.

Help Supervising Teachers Grow on the Job—In general, the job of supervising teacher is a steppingstone position. These men grown and develop thru participation in staff meetings and attendance at regional conferences. Too often these men are left at home. In 1939 the supervising teachers of the North Central Region secured a tremendous "lift" from attending a regional conference open *only* to them at the University of Minnesota. Let us re-establish this activity.

II. Provide Complete Programs of Vocational Agriculture—The Training Centers

Our graduates imitate the programs and the methods used in the training centers where they work.

In the North Central Region in 1941, only *one* training center in *seven* carried out the much-talked-about "complete program" including all-day, young-farmer, and adult-farmer instruction.

14.8 percent of the centers conducted complete programs

22 percent of the centers had all-day and adult classes

14.7 percent of the centers had all-day and young-farmer classes

22 PERCENT HAD ONLY ALL-DAY WORK.

The hiring of high-quality supervising teachers is the first step toward improvement. Expecting and helping these teachers to conduct complete programs must follow.

III. Provide Participation Experience in All Areas of Vocational Agriculture

This requirement cannot be met unless the complete programs are under way in the training centers. Eight of the 13 North Central states did not offer actual experience in conducting adult-farmer classes in 1941. Experience with all three types of classes: Farm supervision of all three groups of students; advising F.F.A. activities; participation in community affairs; and assisting with activities of the faculty and the entire school are all essential to the production of high-quality teachers of vocational agriculture.

IV. Provide More Time for Participation Training

A comparison of the time our trainees spend practicing their trade with the practice time spent by other professional groups shows our men getting too little practice. Prospective doctors spend one full year of internship in addition to their laboratory and clinical practice. Men who are to be veterinarians spend most of their last two years actually practicing in the field.

A Complete Year—A full year of participating experience would be ideal. However, we must face the fact that the salaries paid to teachers of vocational agriculture in most states are not high enough when compared with salaries that other four-year graduates can secure to justify our asking for the fifth year of training at present. Is it too much to expect that one-sixth of the total college time of our men should be spent acquiring participation experience?

Student Teaching a Full-Time Job—In only 7 of the 13 states in the North Central Region are the students devoting their full time to participation training "Parallel" courses that integrate and supplement the experiences secured in the training centers should be taught during the student teaching period.

Student Teaching Should Give at Least a Six Months' View of the Job—The six months' period is suggested as a reasonable minimum recognizing that 12 months would be better. Farming programs are set up in the fall; short courses start in early winter; and the formalized teaching is at its peak from October to April. Spring quarter is the least desirable time for student teaching. It seems wise, therefore, to have students out in the training centers only in the fall and the winter quarters.

V. Participation Experience in the Junior Year

Most student teaching occurs too late. Three reasons for an early "induction" into the actual business of teaching are given here.

Early Guidance of Agricultural Education Majors—At present, many students reach their senior year only to discover during student teaching that they do not like teaching or that they are not fitted for it. A period of early teaching experience would enable these students to change their majors without serious loss of time and credit. Advisers would be freer to recommend such changes and to point out to students who do poorly but persist in following out the teaching curriculum, that they do so with a great risk of not being certified.

Methods Courses More Meaningful—Until the student teaching quarter begins, prospective teachers have seen the educational process only as students. They, therefore, often find the first courses in methods rather abstract. By teaching the methods courses concurrently with the first quarter of participation experience both areas will be enriched.

Technical Education More Meaningful—After a quarter "on-the-job" the prospective teacher returns to the campus with a changed outlook and an insatiable curiosity as far as the rest of his courses in technical agriculture are concerned. The "unifying" courses in many departments here at Ohio State are now being delayed until *after* the first quarter of student teaching.

VI. Participation Experience Should Be Organized to Provide Added Training in Technical Agriculture

We commonly hear student teachers remark, "I learned more agriculture during student teaching than in any other quarter in school." We found at Ohio State University that our trainees possessed only 50 percent of what we considered essential farming abilities.

One student in 26 had vaccinated chickens for pox

One in 7 had castrated lambs

One in 5 had sprayed fruit trees

The missing abilities were those that these teachers were expected to go out and develop in their students.

A List of Essential Farming Abilities—It is suggested that each department of agricultural education in conjunction with the respective subject-matter departments of the college prepare such a list. This list should be given to every prospective teacher of vocational agriculture as early as possible in his college career. This list then can become a basis for deciding upon entering teaching; for choosing college courses; and for planning to secure home farm experiences during vacation periods.

Definite Planning for Added Experience—An up-to-date inventory of the essential farming abilities should accompany the student when he arrives at the training center. With this as a guide the supervising teacher can plan for providing many of the opportunities for securing added farm experience needed by the individual student.

VII. Some of the participation Experiences Should Be Acquired in a Center Some Distance from the College

Residence in the training center and spending full time in student teaching makes it relatively easy to conduct part of the participation program away from the college area. This weaning of the student from college activities make him live the life of a teacher in a real situation.

Since the types of farming vary greatly within states, it helps a prospective teacher greatly if he can gain experience in a center located in the part of the state where he will probably teach.

VIII. A Student Teaching Guide Should Be Prepared

Staff members, critic teachers, and others who influence prospective teachers vary somewhat in their interpretation of the program of vocational agriculture and the emphasis that they place on certain areas. In order to prevent these differences from confusing the neophyte teacher, each department of agricultural education should prepare a comprehensive statement of policies and approved practices in vocational agriculture. This should be a guide for all persons concerned with the training program and will give new teachers a great deal of guidance their first year on the job.

IX. Students Should Be Taught to Evaluate Complete Programs of Vocational Agriculture

Each student teacher should have working experience with *advisory councils* in both the planning and evaluating of a program of vocational agriculture.

Groups of students should also participate in evaluating the total program of a department of vocational agriculture, using techniques and forms such as were used in the *National Evaluation* study.

These proposals are not new. We need only to put them realistically into practice to get the desired results. College officials demand acts and proof if they are to approve teacher-training changes. Each teacher-training staff should conduct intensive research in both its professional and technical requirements in order to find these needed facts.

*Summary of a presentation at the North Central Regional Conference, Chicago, Illinois, April 11, 1947.

Patronage checks totaling more than $4,000 have been distributed to members of the Walla Walla, Washington, F.F.A. Seed Growers Cooperative.

Selecting prospective teachers of vocational agriculture

C. E. Dean, Teacher Education, A. & T. College, Greensboro, North Carolina

C. E. Dean

WHAT about the selection of individuals who are to become future teachers of agriculture in our high schools and agricultural colleges? During the war many of the strongest and most vigorous young men, both as to physical and mental qualifications, were called to arms and to the war industries. As a result the teacher-training institutions were forced to lower the minimum qualifications of candidates for teachers, and a large number of mediocre teachers were trained and placed as teachers of vocational agriculture.

The writer is conscious of the fact that no definite rules can be followed in selecting prospective teachers of vocational agriculture. However, some plan should be developed that will continue to improve our teachers, or we can expect the teaching field to become filled with men who have no vision, and "when there is no vision the people perish."

Selecting Prospective Teachers

The following are some of the factors that may be considered in selecting young men as prospective teachers of vocational agriculture.

1. It is essential that the individual should have basic farm experience. This does not mean that the individual must have lived on the farm all his life, but he should have spent the greater part of his time since passing his tenth birthday on a successful farm of some size. One or two summers on the grandfather's farm cannot be substituted for adequate farm experience.

To become a real teacher of agriculture the individual needs to have faith in farming and in farm people and must know farming from firsthand experience in order to lead farm people in the road they must travel to attain success. A good rule for the teacher who will train present and prospective farmers is "Know the truth and the truth shall make you free," for "the blind cannot lead the blind." The only way for the teacher to secure this farm background which will enable him to be a practical help to his student in solving farm problems is to have several years experience as a farmer himself. For the most efficient results, the young men selected for training in teacher-training institutions in agriculture should be those who know from experience that they enjoy living in a farm community, for only by living in the community they serve can they be close to the problems of the farm people and lead them on to greater farming success and higher standards of farm living.

On the other hand, young men who have a city background and who prefer to live in the city are always questionable candidates in a program of agricultural education. These are the reachers who will talk agriculture but practice city living. The suitcase teacher who lives 10 to 15 miles from his community in order to enjoy the conveniences of city living has no place in an efficient program of vocational agriculture. If from the necessity of the job he does attempt to adjust himself to farm living in the community, his halfhearted enthusiasm will inspire little cooperation in his students in carrying on a successful farming program.

2. Former students of vocational agriculture who have conducted well-planned farming programs have very desirable backgrounds for entering teacher-training institutions in agriculture. However, students of vocational agriculture who conducted weak supervised farming programs, who were interested in only one specialized phase of farming, or who assume that they have already learned everything there is to know about agriculture seldom make successful teachers.

3. As a general rule, it is best to select for higher training as teachers of agriculture those students who have ranked at least in the upper 40 percent of the high school. The student who ranks high in vocational agriculture and weak in his other high-school subjects will most likely be weak in the tool subjects, which might make him undesirable as a teacher of vocational agriculture if trained.

4. The teacher of agriculture should be conscious of the need of adequate technical training in agriculture and practical farm experience to fit him to carry on a successful teaching program and succeed as a community leader in rural living. The individual who expects to succeed as a teacher of agriculture, whether on the high school or college level, must be capable of discovering farm problems, analyzing them, and finally applying the right facts to solve these problems.

To summarize, the men who become teachers should possess the following qualifications:

1. Must be farm reared or have equivalent farm experience
2. Must be a successful student of vocational agriculture in high school
3. Must have a fairly high general average in all his high-school subjects
4. Must accept teaching of agriculture as a permanent vocation
5. Must appreciate and love rural life
6. Must have faith in farm people and the program of vocational agriculture
7. Must possess a knowledge and a feeling that rural problems can be solved when proper facts and efforts are applied.

Farm life—today and tomorrow

Paul W. Chapman, Dean, College of Agriculture, University of Georgia, Athens

FARMING, from the standpoint of the money invested in it, is America's biggest business. The men and women who own this business are in excellent financial condition. Not only do they have the largest capital investment of any occupational group in any country of the world, but they owe less than 10 cents for every dollar invested in land, buildings, livestock, and equipment.

The present affluence of the farmers of America is due only in part to wartime prices. Farm families have, on an average, always owned more property than city families; a larger percentage of them have always owned automobiles.

In the past many farm families have, by city standards, led lives of drudgery, inconvenience, and isolation; today, however, farm work requires less physical exertion than ever before, and there is not a modern convenience enjoyed by urban families that cannot be made available to homes in the open country.

Today's production standards in farming and the services and conveniences for rural living can be appreciated fully only when compared with those of Yesterday.

Persons too young to remember how farmers worked and lived in the generations of their fathers and grandfathers may make these comparisons by reading farm journals printed 40 or 50 years ago.

Turning, for example, thru issues of *The Breeder's Gazette* that were mailed to subscribers soon after the turn of the century, one finds such interesting items as the following, which throw light upon the marked changes that have come both in the "tools of the trade" and the attitudes of those who use them:

1. Farmers are urged to eliminate the job of resetting tires by buying steel wheels for their wagons.
2. Doubt is expressed by a farm contributor as to the wisdom of accepting the Babcock test for butterfat.
3. One irate farmer demands that the State of Illinois pass a law to keep automobiles off roads outside of towns and cities.

At the time these items were published there were no tractors and trucks on American farms. Very little laborsaving machinery was available. Few services and modern conveniences, as we know them today, were enjoyed by those who lived in the open country. And local programs of agricultural education were unknown.

Fifty years ago America's farm families lived in what we would now regard as almost complete isolation. Naturally, these families had no radios. In 1900, there were only 8,000 automobiles in the United States; few, if any, of these cars were owned by farmers. All-weather,

Dr. Paul W. Chapman

farm-to-market roads were virtually nonexistent. Outside the corporate limits of towns the only hard-surfaced highways were the pikes and toll roads found in a few of the most prosperous rural sections near the larger cities. Rural free delivery of mail had not been inaugurated and not 1 in 300 farm families received a daily paper. Farm work was carried on in much the same way it had been during the last half of the nineteenth century.

Soon after 1900, however, changes began to come rapidly in farming and rural life. Since that time, while there have been periods of limited markets and low prices, technological progress has made greater gains than in any period of the world's history.

Measuring Farm Progress

Progress in the technical aspects of farm production can be measured in many ways. Perhaps three of the most important and convincing are (1) production per worker, (2) size of farms, and (3) production per acre and per animal unit.

If an index number of 100 is used to indicate the production per adult farm worker in 1900, we find that the average farm worker's output by 1910 stood at 115, or a gain of 15 percent in 10 years. By 1930, the farm production index had risen to 145. At the opening of World War II, the index was approximately 165 and, within five years attained an all-time high of about 225. These figures mean, of course, that a young farmer today can, on an average for the nation as a whole, produce more than twice the bulk or volume of farm commodities that his father did when he was about the same age.

The number of acres in the typical American farm is another reliable index of production efficiency, altho it may, in part, reflect a change in the type of farming. As recently as 1925, there were only 145 acres in the typical family-size farm. In 1940, America's average farm contained 174 acres; by 1945, the average had increased to 191 acres. By 1950, the nation's typical farm will no doubt exceed 200 acres in size.

Gains in yields per acre and production per animal unit have, during the past 50 years, not been so impressive, nor are they so important in relation to the nation's total farm income. America's farmers are the most prosperous producers of food and fiber in the world, not because of high yields per acre, but for the reason that one worker handles more acres than do the farmers of other nations of the world. At the time, for example, when farmers in the United States were handling 24 acres each, the farmers of China and India were using but 2 acres, the farmers of Italy 4 acres, and in no country of Europe was one worker cultivating more than 8 acres.

Some gains have been made, however, in crop yields per acre. For many years corn yields thruout the nation averaged 25 bushels per acre; in 1944, an average yield of 34 bushels per acre was harvested. Cotton yields, which for years stood at less than 200 pounds of lint per acre, attained an average national yield of 254 pounds in 1944. Tobacco yields averaged 784 pounds in 1900, but stood at 1,117 pounds when the U. S. Department of Agriculture issued its statistical report in 1945.

Greater and more consistent production gains per unit have been made for animals than for crops. In 1907, for instance, the milk production per cow stood at 3,779 pounds; in 1944, an average production of 4,604 pounds was obtained. In 1907, the average hen produced 85 eggs; in 1944, the average layer produced 142 eggs.

How Production Gains Were Made

Present-day efficiency standards in American farming are due, mainly, to the use of improved tools and the application of science to production.

In 100 years, solely thru the use of better tools, farmers have reduced the time required for producing an acre of wheat from 64 to 2 hours; 38 hours have been cut off the time required for growing and harvesting an acre of corn; the working hours in growing cotton have been reduced from 167 to 5 hours. These are typical examples; most of the gains have been made since the advent of tractor farming and the increased use of mechanical power. The importance of power and laborsaving machinery cannot be overemphasized in any production occupation. Recently the magazine *Life* published a full-page chart showing how the world of work is changing with respect to the kinds of power used and how these changes are resulting in increased earnings for production workers. In 1850, for example, when man supplied 15 percent of the energy used in work, horses 79 percent, and machines 6 percent, the worker produced in one hour goods worth 23 cents. In 1930, when man supplied 5 percent of the energy, horses 12 percent, and machines 83 percent, the goods produced by one worker in an hour had a value of 69 cents. It was estimated that by 1960, when man supplies only 3 percent of the power used, horses 1 percent, and machines 96 percent, that an average of $1.36 worth of goods will be produced per hour.

Numerous examples of how the application of science to farming has increased production efficiency might be cited. Consider, for example, the case of hybrid corn: For 50 years the nation's average corn yields stood at 25 bushels per acre. Then hybrid corn was introduced and brought an average increase of 35 percent in the localities that used it. Iowa's corn, largely hybrid, made an average production yield of 50 bushels per acre in 1944.

All production gains are important in relation to farm incomes. They are important, too, in relation to the nation's labor force and the national welfare.

In 1850, about the time the steel plow was introduced and before any agricultural education institutions or agencies had been established in the United States, 70 percent of the nation's workers were engaged in farming. By 1900, the percentage of farm workers among the nation's gainfully employed had dropped to 35; it now stands at about 17 percent of the labor force of the United States.

It might be noted, in passing, that the ever-increasing efficiency in farming made the development of America possible. Had there been no gains in the technology of agricultural production, most of those persons who built our great cities and developed American industry would have been compelled to remain on the land for the purpose of producing their own food supplies.

The Role of Education

The primary functions of agricultural education at the county and community levels are to teach farmers to use the best available tools suited to their needs and to make every possible application of tested scientific knowledge. Much remains to be done.

America's total farm plant, which considered as a whole is so rich and prosperous, is composed of 5,800,000 units, some of which are very small and poorly equipped.

Farm incomes vary widely, as do the incomes in all occupations in which owner-operators invest both capital and labor. The variation in farm incomes is no greater than those derived from the operation of stores, hotels, or factories. But it is true that the nation's low-income farmers and farm workers earn less than any large groups of American citizens.

An analysis of farm incomes during one recent year shows that the top tenth, that is, the operators of about 580,000 farms, produced one-half the nation's total farm output. These farmers earn very high incomes; in fact, the top third of the farmers in the United States during a recent year earned an average of $7,500 each. But the bottom third, which produce only 4 percent of the nation's agricultural commodities, had average annual incomes—even in this period of high prices—of $400.

As a matter of fact, however, many of these low-income farmers are not farmers at all; they are simply persons who live in the open country.

According to the census, as you know, any tract of land embracing as much as three acres and producing $250 worth of agricultural products is counted as a farm. There are perhaps a million such farms that are nothing more or less than rural residences. In such cases usually one or more members of the family works in a factory, store, or office in a nearby town; they should be classed as urban workers altho they produce a goodly portion of the family's food supply and sell some farm produce. Many such families enjoy very satisfactory incomes, live in a very desirable environment from the standpoints of health, recreation, and the rearing of children. They also contribute their share to the national prosperity. The number of such "farms"—if they may properly be called farms—will doubtless continue to increase in the years that lie ahead.

On the other hand, there are two million farms in the United States that are so small, so poorly equipped, and so inefficiently managed that the operators live at a subsistence level. These people themselves, other farmers, and the nation as a whole would be better off if these farms were either brought to a higher level of efficiency or absorbed by successful farm operators.

Various reasons are assigned for the existence of subsistence-type farmers; among these are poor soils, lack of capital, and landowner relationships. Such reasons are not fundamental. The basic reason is low production per worker due to the use of poor tools and failure to apply known and tested principles of science. These are the real reasons why production varies so widely from farm to farm and state to state; they explain, for example, why it requires three cows in one of the Southern states to produce as much milk as one cow in California.

But teachers of vocational agriculture and workers in other phases of agricultural education cannot give all their time and energy to farm production problems; they must recognize that farming is a way of life as well as a means of making a cash income. Rural communities must be made attractive and satisfactory places in which to live.

Isolation has been overcome by radios, rural free delivery, and good roads. Conveniences have come with electricity, community canneries, and locker plants. Services have been supplied by rural schools and agricultural education and action programs. No farm is so remote that it cannot get butane and propane gas for heating, cooking, and refrigeration. If all farms are not served today, the instrumentalities for providing the services have been established. Many of these aids for rural living have become possible only with state and federal aid, or with special provisions for credit. These are justified, not only because most services cost more in the country than in the city, but for the reason that farmers supply the basic materials for the food, shelter, and clothing of urban people. But there is still another reason—farm families supply the children to maintain city populations; without these recruits "grass would grow in America's city streets" within four generations. America's hope for the future lies in maintaining a strong, virile, prosperous, and contented farm population.

Today's farm life standards are, on the whole, far above those of former generations. But what of Tomorrow?

Tomorrow's Farm Life Standards

It is impossible to predict what standards of farming and farm life will prevail at the close of the present century.

Who in the year 1900, could have visualized radios in farm homes, tractors in fields, or associations for the artificial insemination of dairy cows? Who, at the turn of the century, even thought of the possibility of dusting cotton fields by airplane, or the sale in eastern markets of grapes picked the day before in the vineyards of California? Who, for that matter, would have been bold enough to predict the preservation of foods by freezing?

New inventions will come; new and startling facts will be added to our store of knowledge. We do not know what they will be, but all are convinced, no doubt, that changes will come faster in the future than they have in the recent past.

Certain trends are so clear, however, that they fall almost within the realm of certainty. One of these is the "revolution" about to take place in Southern farming.

The "one-horse" type of farming in the South will disappear as has the horse and buggy. Mechanical cotton pickers and flame cultivators will come into general use. Southern farms will increase in size, but in 50 years will still be smaller than those in the Middle West. Southern farming will move in the direction of greater diversification. Farm population in the South will be materially reduced, but there will be no decrease in the total production of farm commodities. Occupations will be diversified, too. More and more Negroes will move out of the region.

Large cities thruout the nation will not grow so fast during the last half of the century as during the past 50 years. Industry will tend to move into the smaller towns. Part-time farming will increase. Taking the nation as a whole local markets for farm products will absorb a larger part of the total production. Local

(Continued on page 53)

Male replacement trends and their implications to agricultural education

Burton W. Kreitlow, Teaching Assistant, Agricultural Education, University of Minnesota, St Paul

"MY GRANDFATHER had eight brothers, my father had four, and I have one." We've heard similar statements without giving them a second thought.

We've accepted the statement, "The farms are the seedbed of our population," and let it go at that. A study of the replacement rates suggests it is time farm leaders consider this situation and find out just where the farmers stand in connection with our downward population trend.

When we do this, a new and realistic factor emerges—in the better farming areas the reproductive rate of the farm population has been in such a sharp decline during the past two decades that it can be safely estimated they will not be able to supply replacements for themselves by 1960!

This is truly a startling fact. Altho its implications for the educator are many, let us consider the situation first from the standpoint of the boy trained in vocational agriculture in any section of Minnesota. In a few years at most, and many local communities already face the problem, farmers will reach retirement age with no young men at home to operate the farm. Who, then, is to take over the land? One alternative is for neighbors to expand operations and increase the average farm acreage. Altho this may keep up with the declining birth rate in some areas, it doesn't appear likely in dairy regions or other areas where the type of farming involves high labor requirements.

Establishment in High-Income Area

The second alternative and the one applying directly to agricultural education is the importation of more and more farm-reared and agriculturally trained boys from other sections. It implies that farming must become relatively more remunerative both economically and socially in order to compete with industry and other urban employment for the boys who migrate. Thus the job of the teacher of agriculture is not only to train his student to operate a farm in his community but avail himself of the new and often superior advantages of establishment in farming in a high-income area where farmers aren't replacing themselves. This agriculturally trained boy would be an ideal partner for a farmer near retirement age in a prosperous farming community. The situation would be advantageous to both parties.

A study of the 1930 and 1940 census data was made for five high-income counties in the dairy region of Minnesota. These counties are Blue Earth, McLeod, Nicollet, Scott, and Waseca. The number of net male replacements was calculated for each of three years, 1930, 1940, and 1950 with the following results:

Table I. Net Male Replacements

County	1930	1940	1950
Blue Earth	+34	+29	−17
McLeod	+45	+30	−14
Nicollet	+29	+34	+6
Scott	+19	+22	−10
Waseca	+18	+15	−10

The net male replacements are the excess or deficit of 20-year-old males who are available to enter farming. Migration rates for the 1930–1940 decade were used to calculate the 1950 replacements. All calculations for 1950 were based on conservative assumptions and 1940 census data.

The results of this study indicate that four of the five selected counties will be in need of male replacements from outside their county borders by 1950.

Even if there were no migration during the 1940–1950 decade, the excess of males would be very small as shown in Table 2.

Table II.

County	Excess Males 1950 (No migration)
Blue Earth	14
McLeod	13
Nicollet	20
Scott	18
Waseca	19

These data indicate that unless all farmers' sons in these counties become farmers there will be a need for replacements from elsewhere. For all the boys born on a farm to stay there, is unsound both educationally and from the standpoint of an efficient agriculture. These counties will need trained men from other areas of the state, and they must compete for them with the alleged advantages of the city. If farming is to compete with other occupations for its labor and if much of the migration comes from the lower-income areas, then it becomes very important that we have an adequate educational program available for all youth no matter where they live. It will become increasingly important that boys in certain sections be trained to take advantage of farming opportunities in high-income counties where the male replacement rates indicate a decreasing population.

About half of the boys enrolled in agricultural classes become established in their local community shortly after high-school graduation. In each area the teacher of agriculture must assess the possibilities of profitable farming. Isn't it time, in view of the opportunities in more productive land areas, that we broaden our perspective and include establishment in farming where opportunities are greater? The boy may leave the community—which he does in many cases—but he need not leave all his training with it.

In the United States, where people are free to migrate from state to state, the implications of low birth rates in some rural areas are of considerable significance. It becomes apparent that the type of training farm boys have in Georgia, where during the decade 1920–1950, 30.3 percent of the farmers left the farm to find work elsewhere, is of real significance to the state to which these migrants move. If a boy is someday going to farm in Blue Earth County, Minnesota, it is of significance to Blue Earth County citizens that he has a sound educational background whether he comes from northern Minnesota, eastern New York, or Georgia. The declining birth rate in our high-income counties should awaken us to the importance of equal educational opportunity for all.

Need for Guidance

The foregoing poses two major problems. The first is the preparation of young men and women to choose wisely their life's work. A choice based upon a knowledge of the jobs and their own potentialities can come only thru improved educational opportunities and a real guidance program. The second problem involves raising the status of farming as an occupation on both the social and economic levels. If farming is to compete with industry for migrants, then its standards must be such that young men and women will consider farm life when choosing their fields of work. No longer can the farm be the place where young people stay or go when there's nothing else to do. Tomorrow the farming occupation must compete with other jobs when a farm boy decides on his life's work.

As teachers of agriculture we can exert a powerful influence toward the betterment of the farm family. In doing the job we cannot hide behind desks in classrooms or drape our figure into a schoolroom easy chair. We must move out into the community, study its individual and its group problems, and then provide the leadership necessary to help solve these problems. The guidance of farm boys must be more effective if they are to find their real place in our society. Farm life must be made more attractive if the family-size farm is to survive.

It is no longer a question of "Which son will get the farm?" It's "Who will farm this land when I'm gone?"

For the past eight years the F.F.A. chapter at Brentwood, California, has staged an annual rodeo and livestock show. The chapter possesses a permanent arena which accommodates approximately 1,600 people.

Public relations in the department of vocational agriculture

Ben Bristol, Teacher, Rocky Ford, Colorado

Ben Bristol

MANY teachers of vocational agriculture do not realize the value of adequate publicity for their departments. If they do realize this value, they seem to do little about it.

Interest in the work of the local department of vocational agriculture often lags behind because of the small amount of information which the people in the community have about it. In order to keep interest in the teaching of agriculture at a high pitch it is essential to keep the public informed. No one is going to be interested in something which he knows little about.

Every department of vocational agriculture does worthwhile things. The activities of the local F.F.A. chapter furnish many opportunities for good publicity for the boys, the chapter, the department, and the instructor. Readers will scan such articles with more than passing interest.

Local Newspapers

Practically every community has at least one newspaper which is eager to give space to worthwhile articles about farm youth activities. In the case of Rocky Ford, Colorado, there are three cooperative local newspapers—one daily and two weeklies. The author has found it beneficial to submit articles to all three papers on the average of once a week. This method of publicity has produced excellent results as shown by the response of many local individuals.

Not only does the instructor of agriculture want to think about effective local publicity, but he should broaden his outlook to include state and national levels.

In every state there is at least one newspaper with state-wide circulation which will print articles of interest to its readers. It is not a good idea to submit articles of only local interest to such a paper, as such articles probably won't be printed. Another point to remember is not to include long lists of local individuals just to get their names in the paper.

Before submitting articles to any newspaper or magazine, it is well either to interview the editor personally or write a letter asking permission to submit articles.

There are several agricultural magazines with a national circulation that will print articles submitted to them by local F.F.A. chapters and departments of vocational agriculture. The editors of these magazines eagerly accept articles which meet their requirements.

Not only should newspapers and magazines be utilized to the fullest extent in obtaining adequate publicity for your department of vocational agriculture, but radio possibilities should be explored as well.

The local Future Farmer chapter is fortunate that has a local radio station available for F.F.A. broadcasts. Programs which are put on over local stations will need to be original productions, because of a lack of suitable "ready-made" prepared programs.

It is also well to attempt broadcasts over larger radio stations in the state. These will need to be worked out ahead of time with the agricultural expert of the station concerned. Somtimes these stations will even broadcast by remote control direct from the local high school.

Some teachers may argue that all these public relations activities take more time than they have to spend. It is agreed that some extra effort will need to be made to do a good public-relations job. A well-trained F.F.A. chapter reporter can be a great help in accomplishing this objective, however, and the extra effort on the part of the teacher will pay rich dividends.

Louisiana apprentice teaching program

(Continued from page 45)

assistants in agricultural education and will supervise the teaching of trainees. In addition, these schools afford an excellent opportunity for functional research. Arrangements have been made for using these centers for this purpose. The teacher-trainers have arranged for special training courses in teacher education for the teachers cooperating in this program. The centers selected will be used on a more or less permanent basis in future years. They are located in different sections of the state. They are located in areas representative of the different farming types in the state. These part-time assistants will be paid by the teacher-training institutions for the services they render. We believe that this step will have far-reaching effects in the improvement of our existing program of agricultural education.

The collegiate F.F.A. chapter at Montana State College was reorganized during the past year, after being inactive since before the war.

Last spring the Montana F.F.A. Association printed 500 posters for distribution to local chapters. The posters were designed to encourage cleanup campaigns and the prevention of farm accidents.

Farm life—today and tomorrow

(Continued from page 51)

marketing facilities will be greatly improved.

Meat packing will be further decentralized. Retail cuts will be prepared in packing plants; many will be frozen for shipment.

Agricultural industries will more and more tend to be located in county seat towns, rather than in large cities.

Farm services will increase in number very rapidly; that is, farmers will hire more and more of their work done by local specialists. Incidentally, this "division of work" is the key to American prosperity; it is the basic, underlying principle that brought about mass production in industry. More and more this same efficiency principle will be applied to farming.

Influence of Work Simplification

During the years to come, we will hear more and more about work simplification on farms. Work simplification will result in doing more work with less physical effort and the expenditure of less time.

Better farm tools, more farm services, and work simplification will bring larger family-sized farms and higher per capita farm incomes.

Acre yields of crops will increase largely thru a better undestanding of the use of minerals in the soil. Larger production per animal unit will come, largely thru the elimination of "submarginal" producers who do not now make use of tested scientific knowledge.

Farmers will again produce more products than can be sold at profitable prices. Efforts will be made to change basic economic laws by legislation. This time, public sentiment will favor maximum production at the highest possible level of efficiency. No legislative solution satisfactory to all citizens of this nation will ever be found. The only permanent solution to the "farm production problem" will be the expansion of nonedible uses for farm products by industry. Great progress will be made along this line within the next decade.

Future trends in agriculture will, in the main, be favorable to farmers. The most difficult problem to solve will be that of young men who wish to enter upon the business as owner-operators. High-priced land and equipment will call for a greater investment than previous generations have been called upon to make. In 1900, land averaged in price $19.82 per acre; in the future it will be very much higher and farms will be larger. The investment in equipment at the turn of the century was $.89 per acre; now, in the Cotton Belt $30 is the estimated requirement. If we retain the family-owned farm as the pattern for American agriculture, it will also be essential to maintain a very liberal credit policy in establishing our farmers of Tomorrow.

Farming Programs

C. L. ANGERER

Guiding students in selecting farming programs

Lloyd Dowler, State Supervisor, Carson City, Nevada

Lloyd Dowler

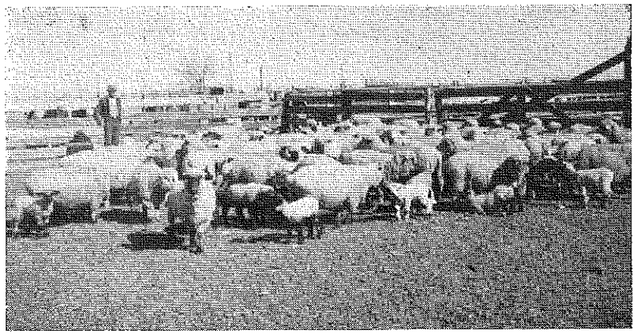
WITH the beginning of a new school year, guiding students in selecting farming programs becomes of major importance to the teacher of vocational agriculture. The preliminary work of calling on each new boy in the program should have been done prior to enrollment in the fall. This, of course, is vital to successful program planning since it is necessary to have the cooperation of the boy's parents in developing this part of the work. Too much emphasis cannot be placed on acquainting the boy's parents with the educational objectives to be attained by proper selection of enterprises for the farming program.

Some teachers spend very little time in individual planning of the long-time program of supervised farming, while others spend four to eight weeks in developing rather extensive plans. Since the beginning of the school year is a normal time for closing out the past year's farming programs that have been in operation, it is necessary to evaluate outcomes of the various enterprises and to find out why some have been financially successful and others have failed. This frequently calls for a revision of the farming program so that selection becomes a continuous process and not merely a first-year undertaking. It becomes necessary then to list some of the important factors to consider when helping the boy select his farming program, such as:

Important Factors

1. *A survey of the home farm* to determine what enterprises are included in the parent's farming program will oftentimes be very helpful in guiding the boy towards proper selection of enterprises to include in his farming program. This survey will indicate places that may show room for expansion in the farming program which may well afford the boy an opportunity for growth which is of utmost importance in selecting the proper enterprises. How well this phase of the program has been studied by the teacher of agriculture and the boy may be measured in the number of changes required in the farming program during the four-year period in high school.

2. *Selecting the type of farming* will be the next step in guiding the boy with his farming program. A careful analysis of the home farm survey will show what type of farming is being carried on at home and by a survey of the community itself it may be determined what the relative importance of the various enterprises are in realtion to size and financial returns. In selecting the type of farming to follow, information should be presented showing the relative importance of the various enterprises being carried on in the community as well as on the home farms of the boys in the class. These data can be collected by the teacher of agriculture and members of the class thru surveys made of the local community. Federal farm census records will be helpful in showing types of farming for a given area. Records compiled on former students of vocational agriculture will be useful in pointing out successful types of farming which have been carried on in the community.



Supervision prior to lambing and at lambing time is essential to successful and effective farming by boys enrolled in vocational education. Picture shows sheep enterprise of Louie Venturacci, State Star Farmer, Fallon, Nevada, 1946

3. *Consideration of the boy's likes and dislikes* will need to be kept in mind and will undoubtedly have come in for considerable discussion by this time. Quite frequently after making a careful analysis of the home farm setup it will be noted that minor enterprises are given little attention on the boy's home farm. Mother and Dad may suggest that Johnny start his farming program with a few baby chicks or a small vegetable garden which may work out satisfactorily in some cases, but with little thought as to whether the boy's major interest is in that type of a program. As a result, the boy loses interest if forced into such a program, and the farming program becomes a burden rather than something of interest and a challenge to the boy. Many times a boy will have expressed a definite desire to get established in beef cattle production and take an unusual amount of interest in this type of farming. Every effort should be made to select the type of farming and the type of enterprise the boy will be most interested in whenever it is practical to do so. The boy may already own some livestock which makes it somewhat easier in determining how interested he is by observing results that have been obtained. For a boy who does not indicate a definite preference, it seems wise to suggest a program that will fit in with the home farm conditions and of sufficient size and scope to truly challenge the boy. The boy who lacks a proper place for carrying out productive projects should be placed on a farm or ranch that will permit him to gain experience in various enterprises which will enable him to make a wise choice of farming programs as he gradually earns enough money to become established in farming.

4. *Economic results of each enterprise* under consideration in the boy's farming program should be studied carefully before a final decision is made. Here again programs of supervised farming that have been completed by former students of vocational agriculture will be most helpful. Extension Service Economists located at the state colleges and universities make studies on cost of production figures in relation to various enterprises. These figures can be obtained for most every community and should be used frequently. Farming programs involving a large capital investment should be analyzed very carefully and outlook charts, agriculture situation, and crops and market reports should be studied before making final decisions on including certain enterprises in the farming program.

5. *Does the farming program have continuity and balance?* One of the most important factors to consider in helping the boy plan his farming program is to see that he has *productive enterprises* that have follow-thru, or ones that can be progressively increased in size and scope from the time the boy is a freshman until he becomes successfully established in farming. *Contributory enterprises* that will support the productive projects, cut down on overhead expenses as well as provide an extra source of income and distribute labor evenly thruout the calendar year should be a part of the farming program. *Improvement projects* should be provided in the farming program and need to be planned just as systematically as the productive enterprises. Improvement projects are those undertakings which have a tendency to improve the real-estate value of the farm such as land drainage, providing permanent pastures, landscaping, and construction of new buildings. *Supplementary farm jobs* should be set up in the farming program. These jobs are smaller in size and scope than improvement projects and are outside of those already included as a normal part of the student's productive and improvement projects which are undertaken by the boy for additional experience or skill or for improving the efficiency of the home farm. A supplementary farm practice usually consists of a single job such as repairing fence, branding, culling poultry, or mowing hay.

If such a plan is followed in assisting each boy in selecting his farming program, it will bring about fewer failures, less need for revision in the farming program from year to year, greater returns from farming programs, and more confidence on the part of parents and other people in the community in vocational agriculture work. It will also develop a systematic approach to other problems which the boy will encounter in future years, and of major importance, it will provide a systematic approach to achieving the educational objectives of the vocational program.

Introducing hybrid seed corn in the Ruston, Louisiana, community

J. L. Harper, Teacher

Using members of the F.F.A. chapter as ambassadors of good will as well as living examples, each year I set up as one of my objectives the establishment of at least one improved practice in my community.

Last year while studying the job of selecting the kind and variety of corn to grow in our community, the question of hybrid corn was brought to the attention of the class by one of the members. This member had visited the previous summer in a neighboring parish where hybrid corn had been grown for two successive years. His report on what he had seen and the information that had been given him by the planter aroused the curiosity and interest of the class so that they wanted more information on the subject.

Veterans with hybrid seed corn which they planted after observing results of the F.F.A. project

I divided the class into groups and each group was assigned work to do in order to secure more information on the subject. One group secured all the available material for reading on the subject. Another group contacted a hybrid-corn seed company in our state and secured a representative to come and explain the production of hybrid corn to us. One group obtained a short motion picture that explained the advantages of planting hybrid seed corn. The other group contacted local seed dealers and secured their cooperation.

After reading and studying results from using hybrid seed, and listening to a very interesting and instructive discussion on the subject by the representative of the seed company, the members decided we should include the planting of hybrid corn in our list of improved farm practices to be introduced to the community.

Twenty-three of the members who had corn in their supervised farming programs secured seed thru the local seed store.

During the time the members were preparing the soil for planting, I visited each one in order to be sure the soil was properly prepared. Before any member began planting, we went to one member's farm and watched him apply his fertilizer and plant the seed. I then visited the other members during this operation.

Each time, thereafter, before a new operation was begun, I arranged my supervisory visits so that each member would be contacted and a complete understanding reached about how the operation was to be carried out.

All the members of the chapter and I visited one farm during the harvesting of the crop and assisted in harvesting and weighing the yield off two acres of hybrid corn and one acre of open-pollinated corn, which was being used as a check plot.

Following the harvest, members of our classes prepared an educational exhibit showing the advantages of growing hybrid corn over the open-pollinated varieties usually grown in our community. After compiling the results of the tests, we found that they had produced an average of 13.8 bushels of corn per acre more than that which would have been produced had the regular community practice been followed.

This improved practice has aroused more interest in our community than any we have introduced in several years.

Hereafter we are going to put forth every effort to have a very large acreage of corn planted to hybrids. We expect to have this improved practice established in our community in a short while so that we can turn our attention to other enterprises which will help to make our community a more worthwhile and self-sustaining one.

Apprentice teaching in Georgia

(Continued from page 47)

supervising teacher holds frequent conferences with the trainees for purposes of checking lesson plans, helping them to improve teaching techniques, and planning activities.

About every two weeks, a member of the teacher-training staff visits the center. On these visits, he reviews the progress made since the last visit, observes the apprentices' teaching activities, provides constructive criticism, and helps them to develop plans for their work of the next two or three weeks.

For the apprentice period, a travel allowance equal to and on the same basis as that of a regular teacher of agriculture is provided for each trainee to be used in travel incident to his work.

At the end of the quarter, the work of the apprentice is evaluated jointly by the supervising teacher and the teacher-trainer. Grades are then sent to the University registrar by the teacher-trainer for the three courses in apprenticeship.

As conditions change and as experience warrants, the apprentice program in Georgia is being modified. For example, all supervising teachers will be provided a workshop on the University campus for 3½ weeks before school opens. One of the major objectives of the workshop will be that of helping these supervising teachers to plan ways to improve the apprentice program in their schools. Five quarter hours of graduate credit will be provided each participant.

Heretofore, the course in apprenticeship has been the last professional course to be taken in the teacher-training program. Beginning next year, one course in education will be provided following apprenticeship. This course is designed to help the trainees to become more intelligent about the problems of program planning and development. The experiences of apprenticeship will be drawn upon in this course.

Studies and Investigations

E. B. KNIGHT

Achievement of high-school students in animal husbandry course in South Dakota

Clinton R. Wiseman, South Dakota State College, Brookings*

Clinton R. Wiseman

THE purpose behind this study was to check the use of standardized tests in agriculture as a measure of high-school students achievement in the animal husbandry course. The data were collected during the school year of 1943-44. Seventeen instructors of vocational agriculture in South Dakota had high-school classes in animal husbandry that year and all cooperated. Prof. R. R. Bentley, then at South Dakota State College, set up the study, gathered and tabulated the data and made a report. The present writer has utilized certain of the tabulations of Professor Bentley and included certain other comparisons and data for this report. Probably no teacher of high-school agriculture would claim that a standardized test in agriculture is adequate to evaluate fully the progress of the individual boys in a department for the department as a whole. Doubtless many would agree that such test results might be one valuable means in such an evaluation.

Testing Procedures

Two sets of tests were administered. The Henmon-Nelson Mental Ability Tests were given in the winter with the purpose of learning the mental ability scores of the boys who took the agriculture tests. The mental ability scores form a valuable background for interpreting the agriculture scores and gains. The Deyoe Tests for Understandings and Problem-Solving in Agriculture (Animal Husbandry) Forms A and B were given in the fall and in the spring.

The purpose of the animal husbandry tests was to get beginning and end test scores in animal husbandry as the boys took the course. The Deyoe tests, dealing with various phases of animal husbandry, are likely well-known with the specific purposes indicated by the test title. The 17 instructors administered the tests and sent in the unchecked papers. The scoring and tabulating were done at the college. At the end, a report was made to each cooperating department. In all, 149 students are reported in these tables; each student having three scores—a mental ability score and Form A and a Form B agriculture test scores. Predominantly, the boys were sophomores in high school. All were studying animal husbandry that year. Seventy-six percent of these boys were from farm homes.

*Formerly teacher-trainer in agricultural education. Now head of education department.

Table 1. Ability and Achievement of the Group

(149 Students)

Mental Test Scores (I.Q.s)		Agriculture Test Scores (Form A)	
q_1	95.2	q_1	99.5
Median	102.1	Median	120.1
q_3	110.6	q_3	136.4
Mean	103.1	Mean	122.3
SD of Mean	12.2	SD of Mean	24.3

For mental ability, there is presented a fairly normal distribution. For the agriculture test scores, the distribution is skewed somewhat at the upper end of the scale and there is a wide range. These data are for the whole state group. No one class, of course, showed such wide variations. However, some classes did show considerable variation and such variability always complicates the learning situation.

The analysis of the results is made in the full report under six main headings. In this article three of these analyses are briefly reported.

A. General Analysis

The gains were found for each student by subtracting his Form A test score from Form B test score. For the whole group these were 122 points, 129 points, and 7 points respectively. On the whole, the gains are disappointingly low for the South Dakota students. Roughly, one-third of them made rather good gains, one-third made small gains, and one-third had either the same score or losses. As probable reasons for the grouped low gains, these are offered: (a) The interval between Form A and Form B was five months. Approximately a full year or nine months would have served better. (b) As Bentley comments, the tests with considerable emphasis on dairy animals and less on beef animals do not fit well the objectives of vocational agriculture in South Dakota. (c) The test emphasizes problem-solving procedures much more strongly than South Dakota instructors generally do. This is not a criticism of the tests.

B. I.Q. As a Factor

With the mental scores at hand, naturally one is interested in the performance and gains of students on different mental levels.

The first thing to notice is that the ability groups performed (achievement) at quite different levels.

The next thing to notice is that the gains made are about the same for each group. The performance levels of the groups are 15 to 17 points difference for two groups but the gains for each group were practically half that number of points, 7 to 8.

Somehow we rather judge that the brighter students in the group learn more than the less able. In this study, the brighter group knew more or, on this test, showed greater facility in working the problems, but they did not, in the allotted time, learn more.

Another analysis was made in terms of the size of the Form A test scores. By this tabulation the low one-fourth of the students on the initial score made the highest gains and the high one-fourth of the students on the initial score made the least gains, in fact, this group suffered a small loss. The very top student made a rather small gain as compared to his initial score.

C. Performance in Separate Schools

The group at any given school is the instructional unit even tho the teacher does give some individual help. The instructor is interested to know how his

(Continued on page 58)

Table II. Mean Achievement Scores and Gains by High, Middle, and Low I. Q. Groups

Mental Ability Groups	Mental Ability	Achievement Scores		
(I. Q.s)	Mean I. Q.	Mean Form A	Mean Form B	Gains
Top one-fourth	117.2	137.7	144.7	7.0
Middle half	103.7	122.4	129.2	6.8
Low one-fourth	87.3	105.0	113.0	8.0

Future Farmers of America

A. W. TENNEY

Chapter encourages rural boys and girls to attend high school

Glenn E. Thoeny, Teacher, Beaver Dam, Wisconsin

EDUCATION of rural youth has become a much-discussed subject among the members of the Beaver Dam, Wisconsin, chapter of the Future Farmers of America since our members discovered that Dodge County ranks fourth lowest in the state in the number of rural boys and girls attending high school.

When confronted with results of a survey published by the state Office of Education showing the county's low educational ranking, despite the fact it is one of the richest and most productive counties in the state, the F.F.A. chapter membership decided they could do something to remedy the deplorable situation.

Early in 1946 the F.F.A. president appointed a committee to check the possibilities of action. This committee of several F.F.A. officers and myself met with the superintendent of schools and the high-school principal, to discuss the feasibility of putting on a campaign to encourage rural youth to attend high school.

Eighth-Grade Visiting Day

The result of this meeting brought forth plans for an eighth grade visiting day to be sponsored by the F.F.A. chapter. Four F.F.A. committee members, Principal Shields and I, met with the county superintendent of schools, and discussed our intentions. Mr. Cravillion furnished us with a complete list of all the rural and parochial schools in our area with the names and addresses of all eighth-grade students.

Jack Larson, F.F.A. vice-president, was appointed general chairman for the event. Letters were sent to all eighth graders and to their teachers, telling them of our plans and the program that was being arranged for them. The cooperation of the entire high school was enlisted to help make the day a success. Fifty-five eighth graders attended this first visiting day in 1946. Thirty-five of these students are now attending high school.

This year plans for our second visiting day were begun in January. Letters were sent to 81 eighth graders in 23 schools. Letters also were sent to teachers asking them to report the number of their students who planned to attend our visiting day on April 28.

The returns from the schools indicated that transportation would be needed for more than 60 students. Transportation routes were planned and F.F.A. members drove their own cars to bring the eighth graders in to our school.

The day's activities began with 75 visiting eighth graders assembling in the agriculture room where they were welcomed by Superintendent Kellog, Mr. Shields, and myself. The girls were then conducted to the home economics department where they watched several demonstrations by members of the home economics classes. The boys viewed demonstrations in soils, milk testing, and carpentry put on by members of the classes in vocational agriculture.

The visitors were then assigned in groups of five to guides who conducted them on a tour of all the classes and shops where they saw genuine class activities taking place. Noon luncheon was served to all the visitors by the Future Homemakers of America.

Left to right—Richard Grebel, freshman F.F.A. member; Clyde Shields, high-school principal; and Glenn Thoeny, vocational agriculture instructor, passing out the Rural School Bulletin to visiting eighth graders

After the lunch hour a 45-minute program of entertainment was furnished by the high-school band, glee clubs, F.F.A. members, and other students of the high school. Following this, course outlines and schedules were distributed, and helpful hints on making out a program of courses were given by the superintendent. A copy of the school paper and the Yearbook were given each student.

One of the most important things, in my estimation, was the distribution of a special rural school bulletin, published by members of the journalism class and printed by the printing department of the high school.

The 16-page bulletin contained pictures of many of the agricultural students and their supervised farming programs. Work carried on by the home economics department was described in articles and pictures. Action pictures of shopwork, class activities, athletic teams, bands, and glee clubs, were printed in the bulletin with articles describing each organization and its activities. Advertising by local business firms on the last three pages helped defray the cost of printing.

Articles were written by the superintendent, principal, home economics teacher and myself stressing the need for rural boys and girls to get a high-school education. Testimonials were written by several prominent businessmen as to why they thought rural people needed a high-school education. Farm parents of children who had attended high school gave their reasons why they sent their children to school.

Attend School Activities

The final events of the day's activities were a track meet with a neighboring high school and a dance recital by members of the girls' physical education classes. The visiting students were then transported back to their respective schools by 4 o'clock in the afternoon.

The results of questionnaires filled out by the visitors showed that 29 boys and 26 girls plan to attend high school this fall. Seven were undecided, four will attend neighboring high schools, and 12 had no plans for further education.

In my estimation, the annual visiting day is doing very much to encourage farm boys and girls in our area to avail themselves of the educational opportunities that are available to them. In rural areas, such as in Dodge County, where high-school attendance is shunned by many boys and girls, we must look at it from a businessman's viewpoint; that is, we cannot sell our product, which in our case is education, unless we advertise.

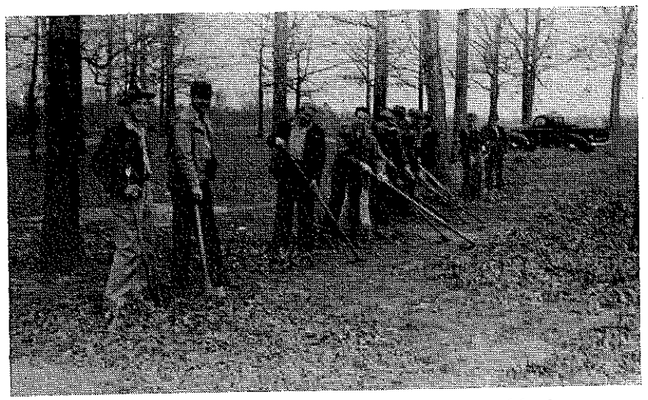
The department of vocational agriculture at Beaver Dam, the F.F.A. chapter, and the entire school, are doing their best to sell education in rural Dodge County.

Veterans help keep forests green

J. BYRON ROCKWELL, Teacher, Lacrosse, Virginia

VETERANS, in an on-the-job-training-in-agriculture class at Lacrosse, Virginia, have organized a "Keep Virginia Green" crew with a 100 percent membership. They are the first of such veterans' groups to organize thus with the hope and determination to keep forest fires from doing damage on their own farms and upon the farms of their neighbors.

These veterans of World War II have been studying forestry under the leadership of J. Byron Rockwell. They have been aided in this study by moving pictures from the Forestry Department and by trained technicians from the county, district, and state forestry departments. In addition to the regular classroom work, field trips have been taken to the nearby forests and wood lots for firsthand instruction in the principles of forestry culture and harvesting. Emphasis has been placed upon methods of removing ripe and defective timber, the protection and retention of the choice, thrifty, unripe trees and the necessity of making provision for the immediate and continuing reproduction of desirable tree species. There has been constant reference and instruction in the latest methods of fire fighting and fire prevention.



Crew members of Lacrosse, Virginia, study construction of fire lanes

In organizing their "Keep Virginia Green" crew, these young men realize that fire is the No. 1 enemy of the forest. It destroys many of the large trees and all of the small young trees. It weakens the trees left so that they become more susceptible to harm from insects and tree diseases. Fire also does inestimable damage by ruining the humus soil, soil bacteria and earthworms, by destroying nests and their young life, and laying waste to both food and cover for wildlife. Often fire causes the loss of human life, results in soil erosion and floods, silts up streams, clogs reservoirs, cripples power plants, and does much general property damage.

The members of this group who fought in Europe were impressed with the great love and care that the peoples of the various countries had for their soil and forests. We have found that here in the Lacrosse community over half of our land is wooded. It is our desire to care for this forest land so that it may be utilized to the greatest advantage. By using good forestry methods the timber crop will be one of the most important crops each veteran will have on his farm. In organizing the "Keep Virginia Green" crew, these young veterans feel that they are beginning to take their place in their community and are rendering a real worth while community service.

In an effort to stimulate interest in keeping good farm records, the National Farm Loan and Production Credit Associations in West Virginia each year sponsor a contest on a county and association territory basis for all students of vocational agriculture.

During the past year, more than 2,000 F.F.A. members in West Virginia competed in a state-wide farm- and home-improvement contest. The annual contest is designed to conserve soil, forests, wild life, and fish, and to improve the appearance of the farm and home.

The F.F.A. chapter at Powell, Wyoming, owns farm equipment valued in excess of $3,000. Major items added to the cooperative machinery pool during the past year include an Overland scraper, posthole digger, fresno, two-way plow, cement mixer, mowing machine, and a bean cutter.

Allen Lee has been appointed assistant state supervisor of agricultural education in Oregon. Last year Mr. Lee served as president of the Oregon Agricultural Teachers' Association and also as president of the state vocational association.

Achievement of high-school students in animal husbandry

(Continued from page 56)

group did and how the individuals performed. The analysis of results in terms of the local groups shows varying results. Without additional data on the local situation and the group there, it would likely be unfair to judge the work of the instructor or the work of the department on these test results.

School *B* with 12 boys in the class with average I. Q.s of 103 made a 30.0 point gain on the tests. School *Y* with 7 boys in the class with average I. Q. of 109 showed a nine-point loss. School *X* with a group of boys averaging 111 I. Q. made a very good initial score but showed a 13 point loss. Another school with 107 average I. Q. made a 38 point gain.

Conclusions

Concerning the departments compared, these conclusions are warranted:

1. Schools with high average mental ability made rather high initial test scores but showed rather small gains and two showed losses.
2. Schools with the highest average initial scores made rather small gains.
3. The best gains were made by schools where the initial scores were somewhat average.

Summary Statements

1. There was a wide variation in the initial agriculture test scores. Many students made better initial scores than others made final scores.
2. About one-third of the group made substantial gains, one-third made small gains, and one-third had the same score or registered losses.
3. In this study the mental ability of the students ranged from 79 to 131 with a mean of 103.
4. There was a sizable correlation between mental ability and initial score (Form A) of about .48.
5. Mental ability seemed to operate strongly as a factor for high initial scores.
6. For the South Dakota group, Part IV of the test proved hardest (lowest percentage of possible points made) and the gains on Part IV were the largest.
7. Part III of the test proved to be easiest and the gains made on Part III were the smallest.
8. The best gains were made by schools where the initial scores of that group were somewhat average.
9. A full period of approximately nine months between the initial test and final test should be used rather than the five-month interval reported here.

Ten members of the Troy, Ohio, F.F.A. chapter have purchased 1,850 trees from the Ohio Division of Forestry to be used in reforestation projects.

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d—directors; ad—assistant to director; s—supervisors; as—assistant supervisors; rs—regional supervisors; ds—district supervisors; t—teacher-trainers; it—itinerant teacher-trainers; rt—research workers; Nt—Negro teacher-trainers; sms—subject matter specialists

Note—Please report changes in personnel for this directory to Dr. W. T. Spanton, Chief, Agricultural Education, U. S. Office of Education.

ALABAMA
d—R. E. Cammack, Montgomery
s—J. C. Cannon, Montogomery
ds—H. F. Gibson, Auburn
ds—T. L. Faulkner, Auburn
ds—B. P. Delworth, Auburn
ds—J. L. Duley, Montogomery
ds—H. R. Culver, Auburn
ds—L. L. Sellers, Auburn
t—S. L. Chesnutt, Auburn
t—D. N. Bottoms, Auburn
t—R. W. Montogomery, Auburn
sms—C. C. Scarborough, Auburn
Nt—Arthur Floyd, Tuskegee Institute
Nt—F. T. McQueen, Tuskegee Institute
Nt—E. L. Donald, Tuskegee Institute

ARIZONA
d-s—J. R. Cullison, Phoenix
t—R. W. Cline, Tucson
t—W. A. Schafer, Tucson

ARKANSAS
d—J. M. Adams, Little Rock
s—C. R. Wilkey, Little Rock
as—S. D. Mitchell, Little Rock
ds—T. A. White, Monticello
ds—O. J. Seymour, Arkadelphia
ds—J. A. Niven, Russellville
ds—V. H. Wohlford, State College
t—Roy W. Roberts, Fayetteville
t—LaVan Shoptaw, Fayetteville
Nt—L. R. Gaines, Pine Bluff

CALIFORNIA
d—Julian A. McPhee, Sacramento
ad—Wesley P. Smith, Sacramento
s—B. J. McMahon, San Luis Obispo
rs—E. W. Everett, San Jose
rs—B. R. Denbigh, Los Angeles
rs—Howard F. Chappell, Sacramento
rs—A. G. Rinn, Fresno
rs—R. H. Burlingham, Chico
rs—J. C. Gibson, Los Angeles
t—S. S. Sutherland, Davis
sms—Geo. P. Couper, San Luis Obispo
sms—J. I. Thompson, San Luis Obispo

COLORADO
d—E. C. Comstock, Denver
s—A. R. Bunger, Denver
t—R. W. Canada, Ft. Collins

CONNECTICUT
d—Emmett O'Brien, Hartford
s—R. L. Hahn, Hartford
t—W. Howard Martin, Storrs

DELAWARE
d-t—R. W. Heim, Newark
s—W. L. Mowlds, Dover

FLORIDA
d—Colin English, Tallahassee
s—Harry Wood, Tallahassee
t—E. W. Garris, Gainsville
t—W. T. Loften, Gainsville
it—J. G. Smith, Gainsville
it—J. L. Poucher, Gainsville
it—T. L. Barrineau, Jr., Gainsville
it—Otis Bell, Gainsville
Nt—L. A. Marshall, Tallahassee
Nt—G. W. Conoly, Tallahassee

GEORGIA
d—M. D. Mobley, Atlanta
s—T. G. Walters, Atlanta
ds—George I. Martin, Tifton
ds—C. M. Reed, Carrollton
ds—J. N. Baker, Swainsboro
ds—J. H. Mitchell, Athens
t—John T. Wheeler, Athens
t—R. H. Tolbert, Athens
t—G. L. O'Kelley, Athens
t—A. O. Duncan, Athens
t—D. Brown, Athens
Nt—Alva Tabor, Fort Valley
Nit—S. P. Fugate, Fort Valley

HAWAII
d-s—W. W. Beers, Honolulu, T. H.
s—Warren Gibson, Honolulu, T. H.
t—F. E. Armstrong, Honolulu, T. H.

IDAHO
d—William Kerr, Boise
s—Stanley S. Richardson, Boise
as—Elmer D. Belnap, Idaho Falls
t—H. A. Winner, Moscow

ILLINOIS
d—Ernest J. Simon, Springfield
s—J. E. Hill, Springfield
as—J. B. Adams, Springfield
as—A. J. Andrews, Springfield
as—H. M. Strubinger, Springfield
as—P. W. Proctor, Springfield
t—H. M. Hamlin, Urbana
t—J. N. Weiss, Urbana
t—L. J. Phipps, Urbana
sms—Melvin Henderson, Urbana
sms—H. J. Rucker, Urbana
sms—Harold Witt, Urbana

INDIANA
d—Clement T. Malan, Indianapolis
t—B. C. Lawson, Lafayette
rt—S. S. Cromer, Lafayette
it—K. W. Kiltz, Lafayette
it—H. W. Leonard, Lafayette
it—H. B. Taylor, Lafayette
it—F. E. Clanin, Lafayette
it—I. G. Morrison, Lafayette

IOWA
d—L. H. Wood, Des Moines
s—H. T. Hall, Des Moines
as—D. L. Kindchy, Des Moines
as—M. Z. Hendren, Des Moines
t—Barton Morgan, Ames
t—John B. McClelland, Ames
t—J. A. Starrak, Ames
t—T. E. Sexauer, Ames

KANSAS
d—C. M. Miller, Topeka
s—L. B. Pollom, Topeka
t—A. P. Davidson, Manhattan
it—L. F. Hall, Manhattan

KENTUCKY
d—Watson Armstrong, Frankfort
s—E. P. Hilton, Frankfort
as—B. G. Moore, Frankfort
as—S. S. Wilson, Frankfort
t—Carsie Hammonds, Lexington
it—W. R. Tabb, Lexington
it—Stanley Wall, Lexington
Nt—P. J. Manly, Frankfort

LOUISIANA
d—John E. Coxe, Baton Rouge
s—D. C. Lavergne, Baton Rouge
as—J. J. Arceneaux, Baton Rouge
as—I. N. Carpenter, Baton Rouge
t—Roy L. Davenport, Baton Rouge
t—J. C. Floyd, Baton Rouge
t—M. C. Garr, Baton Rouge
sms—Harry Braud, Baton Rouge
t—A. Larriviere, Lafayette
t—A. A. LeBlanc, Lafayette
Nt—M. J. Clark, Scotlandville
Nit—D. B. Matthews, Scotlandville

MAINE
s-t—Herbert S. Hill, Orono
ast—Wallace H. Elliott, Orono

MARYLAND
d—John J. Seidel, Baltimore
s—Harry M. MacDonald, College Park
t—Arthur M. Ahalt, College Park
Nt—J. A. Oliver, Princess Anne

MASSACHUSETTS
d—M. Norcross Stratton, Boston
s—John G. Glavin, Boston
t—Jesse A. Taft, Amherst
t—Charles F. Oliver, Amherst

MICHIGAN
d—Ralph C. Wenrich, Lansing
s—Harry E. Nesman, Lansing
s—Luke H. Kelley, Lansing
s—Raymond M. Clark, Lansing
s—John W. Hall, Lansing
t—H. M. Byram, East Lansing
t—G. P. Deyoe, East Lansing
t—G. C. Cook, East Lansing
t—Paul Sweany, East Lansing

MINNESOTA
d—Harry C. Schmidt, St. Paul
s—Leo Knuti, St. Paul
as—Carl F. Albrecht, St. Paul
t—A. M. Field, St. Paul
t—M. J. Peterson, St. Paul

MISSOURI
d—Tracy Dale, Jefferson City
s—J. H. Foard, Jefferson City
ds—J. A. Bailey, Jefferson City
ds—C. M. Humphrey, Jefferson City
t—G. F. Ekstrom, Columbia
t—C. V. Roderick, Columbia
sms—Joe Duck, Columbia

MISSISSIPPI
d—H. E. Mauldin, Jr., Jackson
s—A. P. Patherree, Jackson
as—R. H. Fisackerly, Jackson
ds—E. E. Gross, Hattiesburg
ds—E. E. Holmes, Oxford
ds—V. P. Winstead, State College
t—V. G. Martin, State College
t—N. E. Wilson, State College
t—J. F. Scoggin, State College
t—O. L. Snowden, State College
sms—D. W. Skelton, State College
sms—A. E. Strain, State College
Nt—A. D. Fobbs, Alcorn

MONTANA
d—Ralph Kenck, Bozeman
s—A. W. Johnson, Bozeman
as—H. E. Rodeberg, Bozeman
t—R. H. Palmer, Bozeman

NEBRASKA
d—G. F. Liebendorfer, Lincoln
s—L. D. Clements, Lincoln
as—H. W. Deems, Lincoln
t—H. E. Bradford, Lincoln
t—C. C. Minteer, Lincoln

NEVADA
d—Donald C. Cameron, Carson City
s—Lloyd Dowler, Carson City

NEW HAMPSHIRE
d—Walter M. May, Concord
s-t—Earl H. Little, Concord

NEW JERSEY
d—John A. McCarthy, Trenton
s-t—H. O. Sampson, New Brunswick
as—O. E. Kiser, New Brunswick
as—W. H. Evans, New Brunswick

NEW MEXICO
ds—L. C. Dalton, State College
as—Alan Staley, State College
t—Carl G. Howard, State College

NEW YORK
d—Oakley Furney, Albany
s—A. K. Getman, Albany
s—W. J. Weaver, Albany
as—R. C. S. Sutliff, Albany
as—J. W. Hatch, Buffalo
t—Roy A. Olney, Ithaca
t—E. R. Hoskins, Ithaca
t—W. A. Smith, Ithaca

NORTH CAROLINA
d—J. W. Smith, Raleigh
s—Roy H. Thomas, Raleigh
as—R. J. Peeler, Raleigh
ds—E. N. Meekins, Raleigh
ds—J. M. Osteen, Rockingham
ds—T. H. Stafford, Asheville
ds—T. B. Elliott, Woodland
ds—N. B. Chesnutt, Whiteville
t—Leon E. Cook, Raleigh
t—L. O. Armstrong, Raleigh
t—J. K. Coggin, Raleigh
t—F. A. Nylund, Raleigh
Nt—S. B. Simmons, Greensboro
Nt—C. E. Dean, Greensboro
Nt—W. T. Johnson, Greensboro

NORTH DAKOTA
d—A. F. Arnason, Grand Forks
s-t—Ernest L. DeAlton, Fargo
as—Winston H. Dolve, Fargo
t—Shubel D. Owen, Fargo

OHIO
d—J. R. Strobel, Columbus
s—Ralph A. Howard, Columbus
ds—W. G. Weiler, Columbus
ds—E. O. Bolender, Columbus
ds—H. G. Kenestrick, Columbus
ds—P. J. Ruble, Columbus
ds—D. R. Purkey, Columbus
t—W. F. Stewart, Columbus
t-ds—C. E. Rhoad, Columbus
t—A. C. Kennedy, Columbus
rt—Ray Fife, Columbus

OKLAHOMA
d-s—J. B. Perky, Stillwater
as—Bonnie Nicholson, Stillwater
ds—W. R. Felton, Stillwater
ds—Bryl Killian, Stillwater
t—C. L. Angerer, Stillwater
t—Don M. Orr, Stillwater
t—Chris White, Stillwater
Nt—D. C. Jones, Langston

OREGON
d—O. I. Paulson, Salem
s—Ralph L. Morgan, Salem
as—M. C. Buchanan, Salem
t—H. H. Gibson, Corvallis

PENNSYLVANIA
d—Paul L. Cressman, Harrisburg
s—H. C. Fetterolf, Harrisburg
s—V. A. Martin, Harrisburg
t—Henry S. Brunner, State College
t—William F. Hall, State College
t—C. S. Anderson, State College
t—David R. McClay, State College
it—Russell B. Dickerson, State College

PUERTO RICO
s—Nicholas Mendez, San Juan
as—Samuel Molinary, San Juan
as—Rafael Muellar, San Juan
ds—Fredericko A. Rodriquez, San Juan
ds—Juan Acosta Henriquez, Arecibo
ds—Andres Ramirez, Mayaguez
t—Lorenzo G. Hermandez, Mayaguez

RHODE ISLAND
d-s—George H. Bladwin, Providence
t—Everett L. Austin, Providence

SOUTH CAROLINA
d—Verd Peterson, Columbia
s—R. D. Anderson, Columbia
as—P. G. Chastain, Chester
as—W. E. Gore, Columbia
ds—W. M. Mahoney, Honea Path
ds—J. H. Yon, Loris
ds—W. R. Carter, Walterboro
t—B. H. Stribling, Clemson
t—J. B. Monroe, Clemson
t—T. E. Duncan, Clemson
t—F. E. Kirkley, Clemson
t—W. C. Bowen, Clemson
Nt—Gabe Buckman, Orangeburg
Nt—J. P. Burgess, Orangeburg

SOUTH DAKOTA
d—J. F. Hines, Pierre
s—H. E. Urton, Pierre
t—Stanley Sundet, Brookings

TENNESSEE
d-s—G. E. Freeman, Nashville
as—J. W. Brimm, Nashville
ds—H. N. Parks, Gallatin
ds—L. A. Carpenter, Knoxville
ds—Ben Douglas, Jackson
ds—S. L. Sparks, Nashville
t—N. E. Fitzgerald, Knoxville
t—J. B. Kirkland, Knoxville
rt—A. J. Paulus, Knoxville
rt—E. B. Knight, Knoxville
Nt—W. A. Flowers, Nashville

TEXAS
d—W. E. Lowry, Austin
s—Robert A. Maurice, Austin
s—R. Lano Barron, Austin
as—George H. Hurt, Austin
ds—O. T. Ryan, Lubbock
ds—C. B. Barclay, Commerce
ds—C. D. Parker, Kingsville
ds—A. B. Childers, Mart
ds—L. V. Halbrooks, College Station
ds—W. E. Williams, Alpine
ds—J. B. Payne, Stephenville
ds—L. I. Samuel, Arlington
ds—J. A. Marshall, Nacogdoches
ds—Thomas R. Rhodes, Huntsville
t—E. R. Alexander, College Station
t—Henry Ross, College Station
t—J. L. Moses, Huntsville
t—Ray L. Chappelle, Lubbock
t—S. V. Burks, Kingsville
it—E. V. Walton, College Station
it—G. H. Morrison, Huntsville
it—F. B. Wines, Kingsville
it—R. M. Hargrave, Lubbock
Nt—E. M. Norris, Prairie View
Nt—W. D. Thompson, Prairie View
Nit—O. J. Thomas, Prairie View
Nit—E. E. Collins, Texarkana
Nit—S. E. Palmer, Tyler
Nit—Gus Jones, Caldwell
Nit—Wardell Thompson, Prairie View
Nit—Paul Rutledge, Palestine

UTAH
d—E. Allen Bateman, Salt Lake City
s—Mark Nichols, Salt Lake City
as—Elvin Downs, Salt Lake City
t—L. R. Humpherys, Logan

VERMONT
d—John E. Nelson, Montpelier
s—C. D. Watson, Burlington
t—James E. Woodhull, Burlington

VIRGINIA
d—Richard N. Anderson, Richmond
s—F. B. Cale, Richmond
as—R. E. Bass, Richmond
ds—W. R. Emmons, Boykins
ds—J. O. Hoge, Blacksburg
ds—W. R. Legge, Winchester
ds—J. C. Green, Powhatan
ds—W. C. Dudley, Appomattox
t—H. W. Sanders, Blacksburg
t—C. E. Richard, Blacksburg
t—C. S. McLaren, Blacksburg
Nt—J. R. Thomas, Ettrick
Nt—A. J. Miller, Ettrick
Nt—M. A. Fields, Ettrick

WASHINGTON
d—H. G. Halstead, Olympia
s—Bert L. Brown, Olympia
as—M. C. Knox, Olympia
as—H. M. Olsen, Olympia
as—E. M. Webb, Pullman
ts—Oscar Loreen, Pullman

WEST VIRGINIA
d—John M. Lowe, Charleston
s—H. N. Hansucker, Charleston
as—S. D. McMillen, Charleston
t—D. W. Parsons, Morgantown
t—C. W. Hill, Morgantown

WISCONSIN
d—C. L. Greiber, Madison
s—Louis M. Sasman, Madison
t—J. A. James, Madison
it—Ivan Fay, Madison
it—Clarence Bonsack, Madison
t—V. E. Nylin, Platteville
t—J. M. May, River Falls

WYOMING
d—Sam Hitchcock, Cheyenne
s—Percy Kirk, Cheyenne
t—Jack Ruch, Laramie