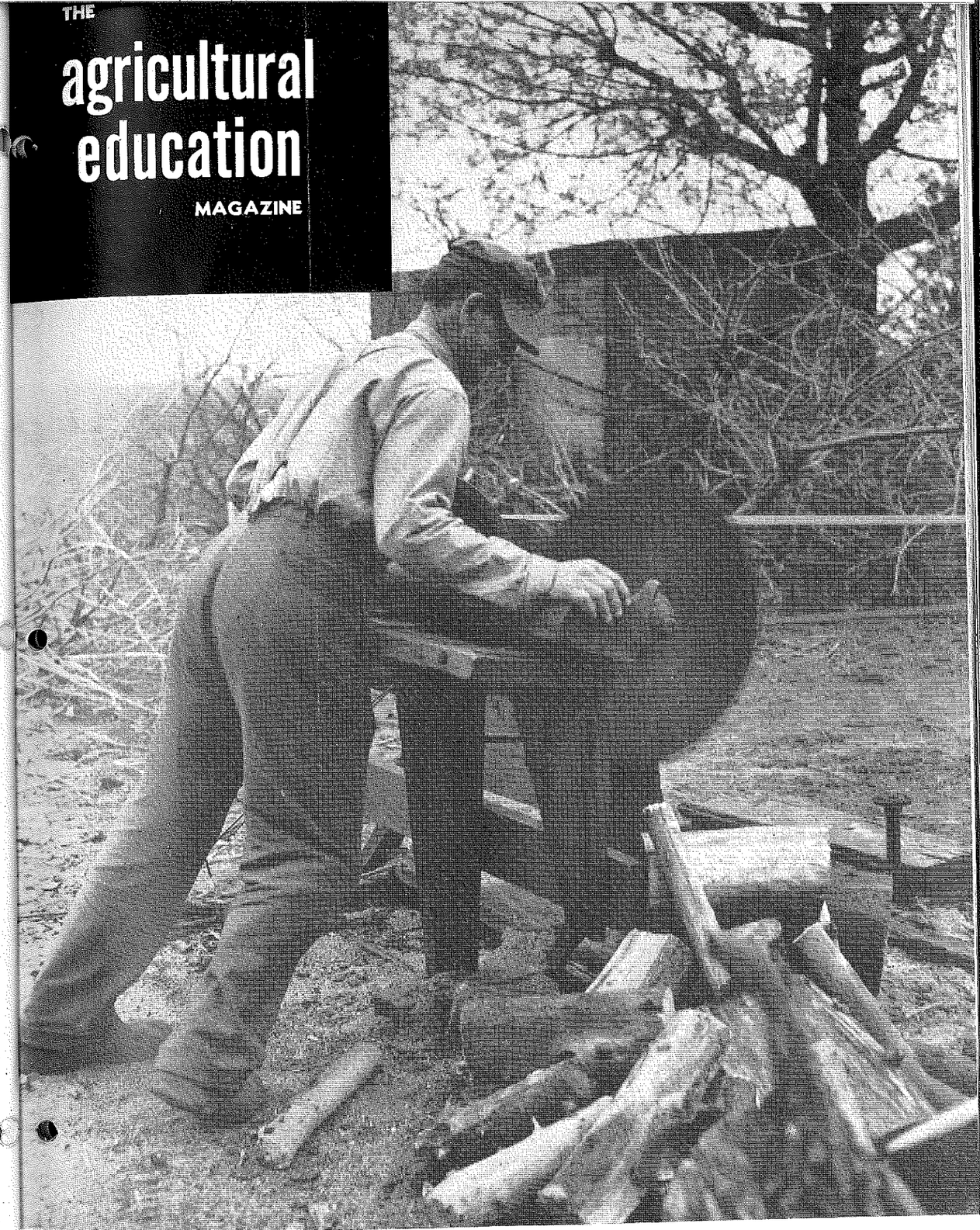
THE agricultural education MAGAZINE



Education in safety principles will reduce farm accidents.
Photo courtesy National Safety Council

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The Agricultural Education Magazine

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THE INTERSTATE DANVILLE, ILL.

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Editorial Comment

New horizons in farm safety

Marvin J. Nicol

A TOTAL of 18,500 farm residents were killed accidentally last year. Over 1,500,000 were injured, and 50,000 of these suffered permanent physical injuries. The total financial cost of these accidents, including property loss, medical expense, insurance overhead, and time lost from work was estimated at $1,000,000,000.

Reductions can be made in the tremendous toll taken by farm accidents only by reaching a majority of 6,000,000 farms in America with safety information. On these 6,000,000 farms live over 26,000,000 people. Many of their practices of working, playing, driving, housekeeping, must be changed to eliminate the causes of accidents. Obviously, this is no small task.

Fortunately, the largest group of farm people are boys and girls under twenty years of age. This group of about 11,000,000 does not have so many unpaid practices to "unlearn." They are more susceptible to and more accessible for education, and much of their work influences their parents.

There are over 2,500,000 tractors in use in America, 36,000,000 farm field machines (plows, mowers, combines, etc.) and 29,000,000 farmstead machines (pumps, shredders, silo fillers, etc.). In the hands of careless or poorly informed workmen, many if not all of these machines are potentially dangerous. A simple safety practice, such as keeping shields in place on the tractor power take-off, alone removes a single potential hazard that costs many lives each year.

Education is Essence of Safety Plan

Education in the principles of accident prevention for agricultural leaders and through them for over 26,000,000 farm residents of America is the essence of the plan for greater farm safety.

Industry has reduced its accident rate 50 per cent as a result of an intensive education program in accident prevention over a period of 15 years. This achievement offers a stimulating challenge to all who are interested in social and economic welfare of rural America.

The development of safety consciousness and recognition of rural accident hazards is, in reality, the educational phase of the Farm Safety Program.

Farming is a family proposition. A typical American farm is family operated, each member of which helps to make the decisions to do the work. It is imperative then that all members of the farm family be made safety conscious. This will include a recognition of the dangerous spots around the farm; what constitutes major hazards; what are the dangerous practices in handling farm machinery and livestock; how children can be safeguarded; what are the risks in the use of electricity; efficiency in fire prevention; up-to-date knowledge of first aid; and a host of other items.

Only limited farm accident statistics have been collected. More complete and more detailed accident records, including both fatal and non-fatal, must be collected and summarized in state and local areas. At the same time accurate nation-wide studies should be made periodically under the supervision of trained research personnel.

Comparatively informal and less accurate surveys of farm accidents are being made by F. F. A. chapters in many communities. The purpose of the survey is to secure, compile and record statistics which are essential as a basis for planning an effective local program for farm accident prevention.

Check lists have proved to be a popular means of securing results in the removal of hazards from the home farms of F. F. A. chapter members and their families.

Effectiveness of check lists is increased when used in connection with an intensive campaign in the chapter or community to remove hazards. There is a check list available from the National Safety Council, although chapter Advisers have indicated that good results have been obtained with those prepared by their own chapter members.

Farm safety subjects are becoming more popular for F. F. A. oration contests. They have a strong human appeal and a well organized and capably presented safety oration can create safety consciousness in the listening audience.

During the last full week of July, rural America each year observes National Farm Safety Week. Although farm safety is a year around problem there is much to be gained in focusing attention on farm accident prevention during this campaign. In the past, a number of F. F. A. chapters have cooperated with state and local safety councils and agricultural organizations in this campaign. Activities have consisted of participation in special meetings on farm safety with other groups, special safety demonstrations and exhibits, distribution of safety materials, radio programs, and sponsorship of safety films.

The post-war period in agriculture has frequently been referred to as a more highly mechanized farming era. Teachers of vocational agriculture might well consider the importance of this aspect in the course of instruction for the current period. Farm machinery units should include instruction on safe operation of farm equipment and time allotted in the farm shop course to learn safe use of hand tools and equipment.

We are now entering the period which promises to exceed all former records for repair, remodeling and construction of farm structures—homes, barns and other farm buildings. Planning for safety in these farm buildings can materially reduce farm accidents. A streamlined course in vocational agriculture will provide instruction for safety features in planning of farm construction.

Yes, accidents can be prevented! Just as surely as we have controlled typhoid, diphtheria, smallpox and other plagues, we can also control the plague of farm accidents which sweep our nation each year. They can be prevented if there are enough leaders in each community who are determined to do all in their power to prevent accidents.

This is the new horizon in farm safety—the dawn of a better day for American agriculture.—Marvin J. Nicol, Agricultural Relations, National Safety Council.

Our magazine gets new publisher

On August 1, 1947, the comptroller of the Meredith Publishing Company, Des Moines, Iowa, informed W. Howard Martin, business manager for *The Agricultural Education Magazine,* that *Successful Farming* would be unable to print our magazine after December, 1947. This action was taken to give some relief to the company in the handling of its own publications.

The editing-managing board is pleased to announce that arrangements were made with the Interstate Printers and Publishers of Danville, Illinois, to take over the responsibilities for printing our magazine beginning with the current issue. Under the new arrangement the procedures for handling subscriptions and copy will be the same as heretofore, with group subscriptions mailed directly to the publisher and copy to the editors.

We appreciate the professional considerations extended us by *Successful Farming* and the Meredith Company in publishing the magazine since it was founded in 1929. We anticipate that the Interstate Company will provide a similar standard of workmanship.—Henry S. Brunner, Chairman, Editing-Managing Board.

Ohio's farm safety program

D. R. PURKEY — District Supervisor, Columbus, Ohio

THE importance of farm safety has long been recognized by supervisors and teacher trainers as an important part of the program in vocational agriculture. After the appointment of W. E. Stuckey (a former teacher trainer) as Farm Safety Specialist in the Ohio Division of Safety and Hygiene, considerable progress has been made through his cooperation with the supervisory and teacher training staff.

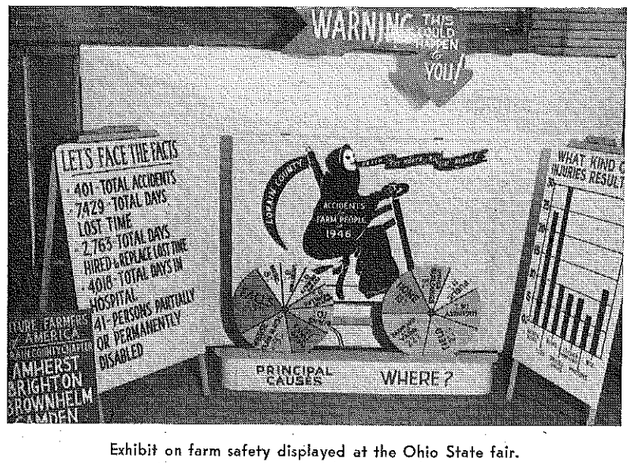


Exhibit on farm safety displayed at the Ohio State fair.

Future Farmers are encouraged in their safety activities by several contests. The Division of Safety and Hygiene of the Industrial Commission, through Mr. Stuckey, in cooperation with the Ohio Association of F. F. A., presents banners for outstanding work. This has stimulated considerable activity and helped promote farm and home safety. Last year 96 chapters entered this contest. To this group, 3 banners and 29 Certificates of Merit were awarded.

Each chapter completed a check list and winners were determined by a point system. A review of one of the school's entries will give the type of activity which is considered effective in promotion of farm safety and awarded a given number of points. (1) Chapter maintained a live bulletin board. (2) Several regular F. F. A. meetings were devoted to farm safety. (3) Ninety-four percent of the membership checked farmstead for fire and accident hazards, and eliminated them when possible. (4) Seven demonstrations, stunts, or playlets were presented before local farm groups. (5) One hundred percent of the chapter membership conducted Safety Council Farm and Home Accident Surveys. (6) One radio program was presented on farm safety. (7) Four magazine articles were published on farm safety. (8) A display was prepared and shown at four different occasions. (9) The chapter sponsored a course in first aid through the local Red Cross. (10) Chapter maintained a current library of accident and fire prevention literature. (11) Conducted a successful farm home clean-up campaign. (12) Chapter furnished materials for safety programs in local Granges. (13) Sponsored a school safety program in cooperation with the State Highway Patrol and County Game Warden. (14) Conducted a hazard recognition contest.

Another important promotion idea is conducted through the State association by the Farm and Home Safety Committee of the Ohio State Safety Council. This committee is composed of leaders of all state agricultural agencies and organizations, with Ralph Howard, State Supervisor of Vocational Agriculture, as chairman. The Council has offered awards to the ten best safety displays. Through this contest two groups of peoplee are reached. First, the people who see the display or exhibit; second, and most important, the chapter which prepares the exhibit. As a result of this contest many exhibits have been displayed in store windows and at state, county, or local fairs.

Monographs Prepared

Monographs have been prepared by Mr. Stuckey, with the aid of the extension specialist in the various enterprises. These monographs are used by teachers of vocational agriculture to help integrate safety in their every-day teaching programs. An example of this is the series on farm machinery repair which is used with teaching units to emphasize the importance of safety with each machine. The same procedure is followed for livestock and farm shop units.

Fire safety has also been stressed by our teachers of vocational agriculture and state staff. The $100 state contest sponsored by "Fire Underwriters" has been one means of promotion. Many F. F. A. chapters are conducting fire safety campaigns as well as safety programs through their County Safety Committees. The following check blank is used by the Van Wert-Marsh Chapter for this purpose.

Fire safety home inspection blank

F. F. A. MEMBER, VAN WERT-MARSH, OHIO CHAPTER

	Yes	No
1. Can persons escape from each room of upper story if fire has involved first floor?		
2. Have you ladders which reach to roof?		
3. Can some of your farm equipment, such as sprayers, be used to combat fires?		
4. Is there any organized fire protection in your community?		
5. How would you call for this protective service?		
6. What provisions have you made to fight fires?		
7. Where can fire engines take water?		
8. Has danger of ignition of buildings been eliminated in regard to manure? ____ Fodder? ____ Hay? ____ Fertilizer?		
9. Are oils (kerosene and gasoline) handled only in the daylight? Only where spillage cannot be ignited?		
10. Are all electric fuses of right capacity (15-ampere for branch circuits)?		
11. Are all lights, including electric lights, in the house, barn or other structure so located they cannot come in contact with combustible material?		
12. Are places provided in barns and other farm buildings where lanterns can be hung and not set on floor?		
13. Is hay loft well ventilated?		
14. Can animals be quickly removed from barns?		
15. Are brooders listed by Underwriters' Laboratories, Inc.?		
16. Are gasoline stoves and kerosene heaters of types listed by Underwriters' Laboratories, Inc.?		
17. Where feed has to be cooked, is this done outside the barn?		
18. How hazardous are the insecticides which you use?		
19. Do you give your house, yard and other property a general spring and fall cleaning and get rid of useless things?		

(Continued on page 127)

Education in farm safety at Saunemin, Ill.

CHARLES H. CROWLEY, Teacher

Charles H. Crowley

LAST FALL our veterans classes requested that a unit on farm safety be included in their course of study. The special teacher and I were not familiar with any units on farm safety being offered. After a discussion we decided that if we could keep the veterans reminded of the possibilities of accidents happening to them, we would be offering more than just a unit on safety. We decided the way to accomplish this was to have the veterans bring to class reports on accidents that were reported in their newspapers. We proposed to use the first part of each class period to discuss the accidents, how they were caused, the seriousness of the accidents, and how they could have been prevented. The following is a listing of farm accident reports noted by the class during the school year 1946-47.

NUMBER	CAUSE	DEATHS
14	Corn Pickers	1
6	Bulls	2
3	Corn Elevators	0
3	Fires	0
3	Tractor Overturns	1
2	Falls	1
1	Electric Shock	1
32		6

Corn Pickers

Almost one-half of all the accidents were caused by corn pickers. The specific causes of these accidents were:

11 from pulling stalks from the machine while still in operation
1 from broken power take-off
2 from clothes getting in machinery

The losses were:

1 death
6 loss of right hand
3 loss of both hands
1 loss of right leg
3 loss of fingers from one hand

Bulls

These accidents were caused by the owners thinking the bulls were tame. Results were:

2 deaths
2 broken hips and severe bruises
2 broken ribs

Fire

Fires resulting from an accumulation of trash on tractor engines were responsible for three accidents. The trash ignited and set the tractor and equipment afire. In all three cases the machinery was a complete loss. Three operators received slight burns.

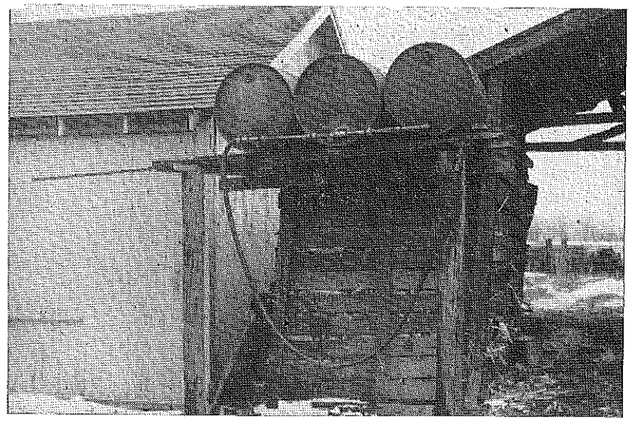
(Continued on page 126)

Farm accident prevention

Photos by National Safety Council

No guard rail on stairway to barn walk, a common hazard which contributes to falls, the leading cause of farm and home accidents.

Walking out on the tongue between teams to make harness adjustments is a dangerous practice. It is safer to walk around beside the horses.



The National Safety Council recommends placing of "above ground" gasoline storage tanks a minimum of 50 feet from buildings.

Montana association sponsors clean-up campaign

NOTE: *The reproduction of the poster presented herewith indicates the nature of a clean-up campaign staged last spring by the Montana Association of the Future Farmers of America. Mr. A. W. Johnson, state adviser for the Montana Association, reports that satisfactory results were obtained from the campaign and that similar campaigns will likely be conducted in future years.*

Montana Future Farmers of America

Have Designated the Month of May for

Spring Clean-up on the Farms

and for

Farm Accident Prevention

1600 Montana Future Farmers

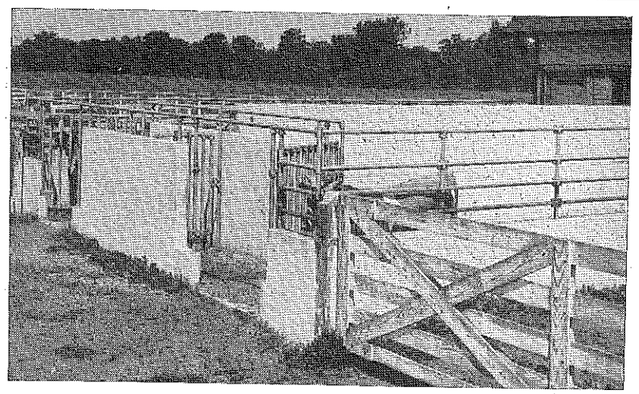
will each DO something about this activity on his home farm during the month of May. This program was approved by the 1947 State F.F.A. delegate assembly on April 11, 1947.

Future Farmers will put this slogan and safety rule into practice:
"A place for everything and everything in its place."

Future Farmers have outlined a program for May which includes the following activities:

1. Repair broken steps.
2. Repair broken ladders.
3. Clear out obstructed pathways, alleyways and walks.
4. Have tools and equipment in place.
5. Repair hammer and axe handles.
6. Label and put medicines in proper place.
7. Have proper wiring and lighting.
8. Clean up accumulations of lumber, rags, glass and barbed wire.
9. Paint and repair buildings and fences.
10. Plant lawns, shrubs, flowers and trees.
11. Make plans in May for a continuous yearly program of this kind.

FUTURE FARMERS INVITE EVERYONE TO HELP IN THIS PROGRAM



A sturdy pen reduces the possibilities of accidents in handling the bull.
Photo by National Safety Council

Education in farm safety

(Continued from page 125)

Corn Elevators

These accidents were caused by clothing getting caught in the cogs.

Results were:
1 loss of right leg
1 loss of four fingers
1 loss of two fingers

Tractors Overturning

Two of these accidents were caused by driving at fast speeds, and the other was caused by driving too close to a creek. Results were:
1 death
1 foot and leg injury
1 loss of a right leg

Falls

These accidents were caused by standing up in wagons loaded with corn. One was caught by a low hanging telephone wire and the other was thrown backwards off the loaded wagon. Results were:
1 death
1 received bad bruises and a broken arm

Electrical Shock

A small girl was playing with a frayed drop cord. It was thought she had been chewing on the cord and was electrocuted.

This spring we felt the area covered by the local newspapers was too large to be of any significance to us. We are now having each veteran and all-day student report any accident regardless of how minor the accident is. In doing this we feel we will have a more accurate record of accidents in our school district. We have thirty-six veterans and thirty-one high school boys in our classes. These 67 students come from all areas of the district, and I believe the plan will meet our objective better than trying to rely on newspaper reports. In reporting accidents the class members are to furnish information as to the seriousness of the accidents, number of persons involved, causes of the accidents, and the corrective measures needed to prevent similar accidents. The information will be compiled twice yearly.

Tractor safety rules

Before starting a tractor see that gear-shift lever is in neutral.

Always drive tractor carefully, avoid excessive speed, holes, ditches or other obstructions, reduce speed when turning, and use extra care on hillsides, rough ground or highways.

Avoid refueling or other service work while tractor is running or extremely hot.

Keep tractor in gear going down steep hills or grades.

Always stop tractor before removing or replacing a belt.

Observe standard traffic signals when operating on public highways.

Use lights for night operation; don't operate in the dark.

—*National Safety Council.*

Fire safety home inspection blank

(Continued from page 124)

20. Do you make a general inspection before retiring to assure all fires and lights are out or protected suitably?	____	____
21. Do you keep your cellar, storerooms, attic and garage free from rubbish, old rags, old papers, broken furniture, etc.?	____	____
22. If you use an oil mop, do you keep it in a safe place where it will not catch fire by spontaneous ignition when not in use?	____	____
23. Do you collect ashes in covered hole-free metal containers, and dispose of them promptly?	____	____
24. Do you start fires with paper and kindling only, and never with flammable liquids?	____	____
25. If your home is oil-heated, is the burner oiled, cleaned and inspected early every fall?	____	____
26. Are all stovepipes and chimneys cleaned, repaired and your furnace inspected each fall?	____	____
27. Are floors under stoves and heaters protected by metal, brickwork or cement?	____	____
28. Have you eliminated all stovepipes which pass through attic, closets or storerooms?	____	____
29. Are walls, rafters, ceilings and partitions protected from overheating of stoves, furnaces and pipes?	____	____
30. Is your inside basement door at the head of the stairs made of heavy wood or metal and tightly fitted?	____	____
31. Have members of your family been forbidden to use gasoline, benzine or other flammable cleaning fluids in your home?	____	____
32. Are your electric irons and all electrical appliances used for cooking, equipped with metal stands and heat controls?	____	____
33. Are all electrical cords in your house in the open—none placed under rugs or over hooks?	____	____
34. Do you use only fuses in your fuse box—never substitute coins or bits of metal?	____	____
35. Do you allow only qualified electricians to install your wiring or make all wire splices?	____	____
36. Do you keep matches in metal containers away from heat and away from children?	____	____
37. Do you extinguish all matches, cigarette and cigar butts carefully before disposing of them?	____	____
38. Do you see to it that there are plenty of ash trays in all rooms throughout the house?	____	____
39. Do you know the telephone number of the fire department?	____	____
40. Do you hang wet clothes near the stove?	____	____
41. Do you check the stove or furnace pipe each year for rust holes?	____	____
42. Do you let the stove pipe become red hot?	____	____
43. Does your mother leave the stove when boiling meat?	____	____
44. Do you see that bonfires are out before leaving them?	____	____
45. Do you thaw frozen pipes with a fire or blow torch?	____	____
46. Do you keep oily rags in a metal container with a tight lid?	____	____
47. Do you keep oil and gasoline drums in or near buildings?	____	____
48. Do you stop tractor or car motors when filling tank?	____	____
49. Do you have a fire extinguisher handy in case of fire?	____	____
50. Is all electrical equipment such as irons, toasters and heaters disconnected when not in use?	____	____
51. Are all emergency electrical connections and lights properly hung (not on nails)?	____	____
52. Do you store gasoline in red can properly marked?	____	____
53. Are lightning rods properly grounded?	____	____
54. Do you forbid smoking in the rain?	____	____
55. Do you have a spark arrester on your chimney?	____	____
56. Do you have a ladder handy in case of fire?	____	____

Membership in the New Farmers of America, as reported at the annual convention of the organization held last summer, was 23,248, or an increase of more than 1,000 over the previous year. The total investment in farming of N.F.A. members in 16 Southern states was in excess of $500,000.

The Second Annual Market Day was held recently at the National Stock Yards, East St. Louis, Illinois. Thirty-eight Illinois and Missouri departments of vocational agriculture exhibited 260 lambs, 85 calves, and 716 hogs. Premiums of $5, $1 and 50c were paid on animals that graded choice.

Please help us!

J. E. EVERETT, Teacher, Monroeville, Ohio

Good, sound, practical instructional data have to be gathered from so many different sources that most teachers of agriculture have found it to be practically impossible for them to collect and organize the essential data for their instruction. They have neither the time nor the facilities for doing this work on an adequate scale. Many textbooks, even some of the recently revised editions, are unsatisfactory as a source of data. If the teachers were to collect the data needed for their work, it would be necessary for them to have practically all of the experiment station bulletins, annual reports, and progress reports issued in this country. Without these publications the teachers would have no means of knowing what data were available. I have visited the experiment station several times during the last year and have always found excellent teaching material in the form of mimeographed reports which have not been made available to the teachers as a whole. Teachers of agriculture need assistance in obtaining the facts contained in these mimeographed or printed reports.

Many of our experiment station bulletins published several years ago represent experiments which are still in progress. Take, for example, the Ohio Handbook of Experiments in Agronomy. There are unpublished results of the more recent years of these experiments which are needed by the teachers of agriculture. However, it is necessary in most cases for some one to collect and distribute this material to the teachers. Comparatively few, if any, teachers have been able to collect and organize the data essential for instruction on all the problems which they need to reach.

To give to teachers of agriculture the help which is described above necessitates some organization. The needed assistance for collecting and organizing instructional data might be rendered from the office of the state supervisor of agriculture or from the teacher-training departments of the agricultural colleges.

Dr. George P. Deyoe, Professor of Education at Michigan State College, has joined the staff of the College of Education, University of Illinois, as Professor of Agricultural Education. Dr. Deyoe's responsibilities at the University of Illinois will be principally in the areas of graduate teaching, research, and field service.

Dr. Deyoe was graduated from Iowa State College; his Master's degree was from the University of Chicago; and his Doctor's degree was received at Teachers College, Columbia University. He is known for his books, "Supervised Farming in Vocational Agriculture," "Livestock Farming" (with Peters), "Getting Acquainted with Agriculture" (with Ullrich); for many contributions to professional periodicals; for his work on curriculum construction, evaluation, contest revision; and for many other contributions to agricultural education.

Methods and Materials

G. P. DEYOE

Teaching an improved farming practice

W. R. TABB, Teacher Education, University of Kentucky

W. R. Tabb

MUCH of the work of a teacher of vocational agriculture is teaching improved farming practices. Teachers are often disappointed in the number of their students who use an improved practice that has been dealt with in class.

If a practice is well taught, a large part of the students will adopt the practice and continue to use the practice in their farming programs. The principal reason a student does not adopt an improved practice is that there was some weakness in the instructional program.

The purpose of vocational agriculture is to provide systematic instruction in agriculture to the end that the students may become proficient in farming. This systematic instruction is generally defined as class instruction followed by supervision of practice in the farming programs of the students. Quite often this instruction is not *systematic* or the system used is not very adequate.

If a teacher is to provide systematic instruction, his system must be founded on a sound basis. He must continually ask himself, "How does a person learn an improved practice?" and "Does my system of instruction provide an efficient way for the students to learn the improved practices I would like to teach?"

Abilities to be Achieved

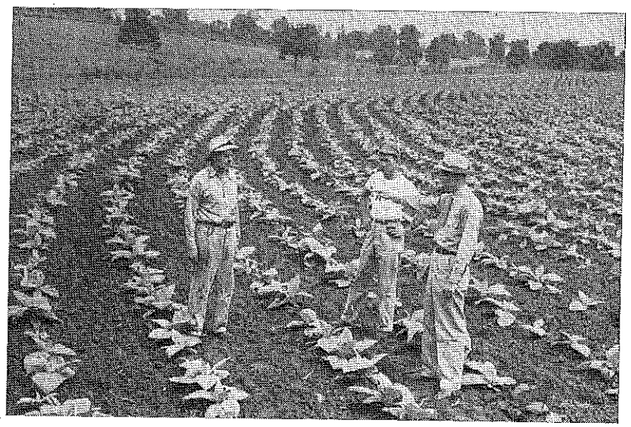
There follows a list of the abilities and other types of growth that seem necessary for a student to possess before we can say he has learned an improved practice:

1. A belief that the practice is desirable
2. A good understanding of how the practice *should be* carried out
3. An understanding of the basic science (or theory) underlying the practice
4. The ability to see that he can use the practice in his own situation
5. The ability to plan to carry out the practice *in his own farming program* (if necessary, under supervision)
6. Confidence in his ability to use the practice
7. The ability to use the practice in his own program, without supervision
8. The ability to evaluate the results from the use of the practice
   a. What the results actually were
   b. Why the results were what they were

A good system of instruction will develop all of these abilities in a large part of the students who are receiving the instruction. Good systematic instruction will provide the necessary learning situations—in class instruction and supervised practice—for a large part of the students to acquire these abilities. There follows a brief elaboration of each of the preceding eight points.

thoroughly one understands how to use a practice, the more likely he will use the practice properly. Some students can get an understanding of how to carry out a practice by study, discussion, and explanation. If the practice is fairly complex, it is not likely that a large part of the students can get sufficient understanding of the practice by study and discussion alone. Some students must see the practice demonstrated before they are able to use it. Many of the more complex practices and those requiring considerable skill will usually require practice under close supervision before the majority of the students understand how to carry them out.

Why the practice should be used and why it should be done a certain way is highly important for the students to understand. Scientific agriculture is scientific only to the extent that the practices are based upon scientific principles. The scientific reasons why a practice is an improvement over common practice are very important. Men or boys studying agriculture get a great deal of satisfaction out of their ability to explain their practices in terms of scientific principles.



Supervision of practice is an essential part of good systematic instruction in vocational agriculture. Here, the teacher, the boy, and his dad are evaluating the results from planting rows of tobacco on the contour. This practice was first started by the boy as the result of effective instruction. Photo Kentucky Department Vocational Education.

In order for one to use and continue to use an improved practice, he must be convinced that the practice is desirable. In the learning process, he must be led to believe that it will be profitable or otherwise desirable for him to use the practice. After using the practice, he must continue to believe that the practice is good for him to use. Unless one is convinced that the practice is desirable, he will likely not try it at all. A good system of instruction includes the necessary learning situations for the students to acquire the belief that each improved practice is a worth-while improvement over common practice. On supervisory visits the teacher should help the student see the benefits he should get or is getting from using the practice.

In order for one to use a practice, he must know how to use it. The more

Teachers often leave a practice in the abstract, and many students are unable to see how they can use the practice themselves even though they understand that it is good and understand how it ought to be used. The teacher needs to make sure that each student, who should use the practice, sees how he can carry it out in his own farming program. Many things may stand in the way of a student's seeing that he can use a practice. Where and how to get certain things needed to carry out a practice often stands in the way. Where to get the D.D.T. and a sprayer may keep many students from using the spray.

Ability to *plan* is more elementary than ability to *do*. If one cannot make a good plan (mental or written), he is not yet ready to carry out a practice. Teachers should have good ways of checking with each student his plans for using the practice before time for the practice to be used. This will determine whether the student has the ability to plan the use of the practice, and it gives the teacher opportunity to check the soundness of the plan and strengthen its weaknesses. Many students learn not to attempt to use a practice again because they fail to carry it out properly the first time they use it. "How do *you* plan to carry out the practice?" is a critical question that teachers need to ask their students.

Many students fail to use a practice because they are afraid of their own ability to use the practice satisfactorily. They already have confidence in their ability to carry out the old practice. Some students will believe they can use the practice if they hear it explained, others may believe they can after they have studied and discussed it, others will pick up confidence when they see the practice demonstrated, still other students will not acquire the confidence until they have tried their hand at the practice. Some of the more timid students may not acquire self-confidence until they have performed the practice several times under close supervision.

Use of Approved Practices

The ability to use the practice in one's own farming program without supervision is the end toward which the teacher strives in teaching an improved practice. The student has not learned the practice thoroughly until he can use it well by himself. The only real proof that a student has learned an improved practice is his use of the practice "on his own." Good systematic instruction must provide for the students to use the improved practices in their own farming programs. This makes it necessary that the students have farming programs in which the improved practices can be used. High school boys must have opportunity to use the practices in their productive enterprise projects, improvement projects, or supplementary practice if they are to have a chance to use the practices in their own farming programs.

If one is to learn a practice to the extent that he will continue to use it in his own farming program, he should be able to evaluate the results that come from the use of the practice. He should be able to determine what the results actually were and why the results were as they were. Some students can learn to evaluate results "on their own" and recognize what caused the results. Other students need assistance in determining that the results from the improved practice were superior to the results from the use of common practices. They also need assistance in determining what caused the results. "End reports" in productive enterprises, which compare the yield or production along with the important practices used, help evaluate results. Class reports on the outcome or results from the use of a practice often help in evaluation. Teacher assistance and supervisory visits are often necessary in order for a student to properly evaluate the results. Production or yield records are necessities, in many cases, for the students to know how they actually came out.

Meeting the challenge of a changing agriculture

E. R. ALEXANDER, Teacher Education, Texas A. & M. College, College Station, Texas

E. R. Alexander

BUSINESS and professional men of Dallas, Texas, own a total of more than 25 percent of all the crop land in Collin, Dallas, Denton, Ellis, Kaufman, Rockwall and Tarrant Counties. These men own more than 75 percent of the cropland in Dallas County alone.

W. O. Cox, Agricultural Manager of the Houston Chamber of Commerce, reports a Farmer and Rancher Club of more than 200 members meeting regularly as a luncheon club to discuss the agricultural problems of the day. W. L. Jones, Agricultural Manager of the San Antonio Chamber of Commerce, reports a Farmer and Rancher committee of 240, all business and professional men of San Antonio. Bill King of the Fort Worth Chamber of Commerce reports a similar situation for his city.

You can cite similar conditions in the towns of whatever size in whatever part of the state you teach.

This overwhelming evidence, inadequate as it is, is not a matter to be complained about. No amount of growling about the evils of absentee landlords will have any influence whatever on this shift of ownership of the productive land.

Many of you teachers are becoming worried because the number of farm boys in your schools is rapidly declining. Farm population has declined one-half in some counties since 1930.

The large farms are getting larger and the total number of farms has declined more than one hundred thousand since 1935.

How can we meet the challenge presented by this social and economic revolution in agriculture? What can we do as teachers of vocational agriculture?

Shall we continue to measure our opportunity by the number of farm boys attending our schools? Shall we continue to measure our instruction by the number of hand skills that we help a decreasing number of boys to acquire?

Shall we meet this challenge by moving on to some community where we can find 36 farm boys and teach them to prune fruit trees, castrate pigs, cull chickens, kill bugs, make self-feeders, and do uneconomical feeding? And then when the number drops to 21 move again?

Economic Revolution

Before we get down to brass tacks answers to these few questions, let's look at some other aspects of this revolution in agriculture.

E. V. Walton of our Department of Agricultural Education says well drillers in Johnson County are having to drill three and four hundred feet for water where only a few years ago water could be found in useful amounts at less than one hundred feet. Our Texas Board of Water Engineers has recently stated that we are using underground water faster than it is being replaced. Two years of low rainfall similar to that of 1934 will be so devastating to our state economy that thoughtful men shudder at the undreamed-of consequences.

The untold and unmeasurable acre feet of water rolling to the Gulf of Mexico if adequately guided and controlled could make this Texas of ours a garden spot of the world.

We know that our soil is the storehouse of the elements of life. When the storehouse is empty man becomes hungry and his children develop pot bellies. spindle shanks, and minds that become the breeding grounds of dangerous thoughts. His beef cattle don't do well either.

We know also that as a nation we cannot live alone and prosper in a world of hunger, sick bodies, and minds that have become cesspools of iniquity through suffering.

It is safe to say that favorable agriculture prices depend greatly upon our continuing to export one-tenth of our industrial and agricultural production. In one month recently our exports declined 13 per cent. If our exports continue to decline we shall find our price structure falling on our heads. The Marshall Plan may enable us to prevent the complete

(Continued on page 137)

There follows an illustration of a good system of instruction (systematic instruction) to teach the improved practice: "Work land and plant row crops on the contour":

An Illustration

1. Classroom Lesson—Problem: Should we work our land and plant our row crops on the contour?
2. Classroom lesson—Problem: How may we lay out contour lines?
3. Field trip—Class practice: Running contour lines on a field that is to be broken and planted to row crops.
4. Project plans—Individual work: Each student make plans for using contour cultivation in his own farming program.
5. Supervised practice—Supervisory visits: Giving individual assistance to students in laying out contour lines and checking on plans to carry out the practice; seeing that the practice is being carried out and giving encouragement to get the practice carried out; pointing out results and helping students see the results they are getting in conserving moisture, controlling erosion, and saving labor.
6. Classroom lesson (upon completion of the major projects where contour cultivation has been used)—Problem: What results did we get from our use of contour cultivation?

Farmer Classes

R. B. DICKERSON J. N. WEISS

A broad, out-of-school program for rural youth

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NOTE: *A preceding article by Ralph E. Bender, which was included in the December, 1947, issue summarized a study pertaining to the development of a problem check list for use in planning educational programs for out-of-school groups. In the accompanying article Mr. Bender outlines a program for meeting the educational needs of such groups as revealed through data obtained from the use of such a check list.*

Ralph E. Bender

THE out-of-school, rural youth program at Canal Winchester, Ohio, appears to be meeting many of the interests and problems of those who are participating in it. This program has been developed broadly during the last ten years under the guidance of the teachers of vocational education in home economics and in agriculture in that community. It has many of the features that seem to be essential in effective youth programs, including the following:

1. The program is large and well balanced, providing activities for men and women in a combined group and in separate groups.
2. It is an annual, year-around program that is quite largely planned and conducted locally by and for the youth.
3. There is a relationship with other youth programs to provide participating experience on a county, district and state level.
4. An attempt is made to reach all of the local, out-of-school rural youth.
5. Resources of various youth organizations and agencies are used and coordinated into the total program.
6. All of the school facilities are available for use, free of charge.

A brief description of the program is herein presented—it shows a way of conducting a youth program having a vocational emphasis; it is not the only way that may be effective.

The Canal Winchester Community Club

The Canal Winchester Community Club is an organization of out-of-school young men and women who are interested in working and playing together in a wide variety of activities, designed to meet their interests, needs and problems. The organization had its start about ten years ago when a number of young men and women, who were at that time meeting in separate groups with the teachers of vocational home economics and of vocational agriculture in a series of short course meetings, cooperated in a few social and recreational functions. Both men and women enjoyed the combined program and suggested that they meet together more often, not only for social functions, but for the discussion of some of their mutual problems. Thus, there was created a need for some kind of an organization to carry out the details of what was desired—resulting in the Canal Winchester Community Club.

Membership in the organization, which has grown from 25 to approximately 125, is composed of out-of-school youth from villages as well as the country. The geographical area served, which started with the local school district, has been constantly enlarged to include all who are interested in the program. Some youth from each of the neighboring school districts are members of the group. The age range of the members is unlimited, but ordinarily it is from 18 to 30. Ninety per cent of the youth are single; the only married couples are those who were former members. Ordinarily the married folks continue until a family is started which changes their interest and problems. Boys and girls from high school who have plenty of opportunity to participate in activities and programs are not ordinarily included in the membership. The seniors, however, are invited as special guests to several of the functions in order to develop their interest in the program. Usually they begin to participate in the organization as soon as they are out of school.

The Community Club elects officers annually, who along with their advisers, the teachers of home economics and of vocational agriculture, comprise the Executive Committee. This committee serves in much the same fashion as Executive Committees of Service Clubs. That is, they meet together often to take care of many of the business details in order to eliminate a long business meeting for the entire group. Likewise, much use is made of committees and in that manner a large percentage of the membership is put to work.

A committee, All American Farmers, met with their adviser Ralph E. Bender, an American Farmer, (right) to plan some details of Young Farmer programs.

Advisory Council

A unique feature of the organizational set-up of the Club is that of the Advisory Council, which has been added recently. This Council is made up of the superintendent of schools, county agricultural agent, county Farm Bureau youth director, Master of the local Grange, a representative of the local ministers and the advisers of the Community Club who are the teachers of vocational home economics and of vocational agriculture. The purpose of this Council is to coordinate and integrate the youth resources of these agencies and organizations into one organization for youth in the community, rather than each one trying to do something as a separate organization. Thus the Community Club has the suggestions, publications and personnel from each of these groups available for use. They likewise have the opportunity which has been used, to send representatives to their conferences and training programs. This advisory council idea has been in practice for only one year, but it is being continued with much interest and enthusiasm on the part of all concerned.

The Executive Committee has the chief responsibility of proposing an annual program on a monthly schedule to the membership, where it is discussed, sometimes revised, and adopted. An attempt is made to carry out a balanced program, involving activities in education, social and recreation, cooperation, community service, moral development and civic improvement. Vocational problems are left primarily to the separate sex groups, which will be described later. Use has been made of the Problem Check List* as a device for each member to take an inventory of his or her personal problems. The lists are summarized and suggestions taken therefrom to assist in planning the program. It may not be necessary to do this each year, particularly if there is not much change in the membership.

*The Problem Check List that was developed by the writer. It is described in the December, 1947, issue of *Agricultural Education Magazine.*

The organization meets regularly once per month in addition to the many social and community activities which it sponsors. The program during the summer months consists of tours, picnics and some participation in camps, rather than the regularly scheduled monthly meetings. The typical monthly meeting consists of a short business session, a discussion of some problem which is of mutual interest to men and women, a period of recreation and refreshments. These meetings, as well as most of the other activities, are held at the Canal Winchester school. All of the facilities of the school are available to the group free of charge. This is an excellent opportunity and that is as it should be. There is no reason why schools should not be used for both youth and adult programs.

Some of the problems which have been discussed by the group in recent years are: "Developing our personality," "Moral problems of young people," "Shall I go to college?" "Social etiquette," "Choosing a mate," "Preparation for marriage," "Furnishing a home," "What are we fighting for?" and "How can we win the peace?" A variety of ways are used to develop these problems, including panel discussions, discussions led by one of the advisers or a member of the group, outside speakers and use of films. An effort is made to have as many of the members participate as possible. With an average attendance of 65, as was the case last year, it is a bit difficult. This year the plan of dividing the group into small discussion groups, with a summary at the close of the period for the entire group, will be attempted.

Social and Recreational Activities

In the social and recreational period a variety of activities have been used, with the playing of folk games and square dancing being most popular. Group singing, pencil and paper contests, circle games and round dancing have likewise been used at the regular meetings. Roller skating and swimming parties, tours, picnics, bellings, hay rides and wiener roasts make up some of the other social functions. An attempt has been made to develop the skill and ability of the members to provide the leadership necessary for leading such recreational activities as square dancing and folk games. A leadership training program in recreation, open to the public, has been sponsored by the group on two different occasions. Individual members have attended such training programs sponsored by other groups. The Club needs to make further development in this area.

The refreshments, which are planned for by a different committee at each meeting, are usually paid for by an assessment of those present. Other activities are paid for thru the funds accumulated by the organization. Sponsoring of public square dances and putting on a three-act play have been the chief money-making activities, even tho the primary objective in these has been otherwise. The play is a splendid activity for those who are interested in dramatics.

Community Institute

A Community Institute, sponsored by the Club, provided the public a good speaking program and also a period of social recreation. Another community activity is participation in the Community Fair, which is sponsored by the school. Each year the Club has an educational exhibit—a good task for some of the members to do and a good advertisement for the organization. One of the Club meetings was used to discuss a school levy which was being conducted by the voters of the district. These few community activities are good, but more of this type of thing should be in the program.

Each year one of the high points of the annual program is a banquet which was attended by 92 members this past year. A banquet program and dance follow the three-course meal. It is a more formal function than some of the other activities, thus adding to the total experience of the youth.

As previously mentioned, the out-of-school youth program at Canal Winchester includes activities for the young men and women in their separate groups, under the direction of the teachers of vocational home economics and of vocational agriculture. Inasmuch as the young women's program had not been functioning throughout all of the years, due to the limited time available by the teacher of home economics, the discussion of the separate program will be limited to that of the Young Farmers' Association.

The Young Farmer's Association

The Young Farmers' Association is an organization of young men who are interested in becoming more definitely established in farming. Its chief function at Canal Winchester, as well as elsewhere, is to sponsor a series of instructional meetings, which is usually referred to as "short course." Other activities which are of interest primarily to young men are likewise conducted. Inasmuch as most of the young men of this group also belong to the Community Club the kinds of activities and the schedule of them are integrated as much as possible with that program.

A committee of eight young men are elected by the group of 76 enrolled young farmers to act in an executive and advisory capacity. These eight men in turn select from their group the officers they feel necessary to operate the organization. Along with their adviser, the teacher of vocational agriculture, they make an effort to contact all of the young farmers in the area who would be or should be interested in the program. They likewise survey the problems that the young men are experiencing in getting established in farming. From this list of problems a suggested program is prepared and presented to the entire group for approval. This procedure usually takes place in October and the weekly series of meetings is started in November, extending thruout the fall and winter months, making about 20 meetings.

The instructional meetings, which are in charge of the teacher of vocational agriculture, normally take from 90 minutes to two hours per session. Most of the meetings are of the discussion type, with some use made of specialists, films and demonstrations. The young farmers are used as much as possible to relate their experiences and problems to that which is being discussed. Some of the typical problems that have been discussed by the group are:

- What are the opportunities for profit with hogs?
- Planning a breeding and marketing schedule for hogs
- Feeding the sow during the gestation period
- Adjusting livestock to feed
- Producing good quality milk
- Preventing mastitis
- Making use of the artificial insemination program
- Agricultural outlook for 1946
- Using the Soil Conservation program
- Increasing acreage of legumes
- Making good use of lime
- Plowing under fertilizer
- Selecting suitable hybrids
- Planning a fair farm lease contract

In addition to the discussion of production and management problems the young farmers group has sponsored tractor and farm machinery repair programs which were intensified within a few weeks, rather than over a period of several months. Regardless of the nature of the short course program the young men have been encouraged to use the farm shop facilities of the school at any time to do some desired construction or repair work.

Throughout the instructional program, emphasis is placed upon the adoption of improved practices in order to better the home farm business. The teacher makes many visits to the farms of the young men to assist them in initiating and carrying out good practice. At the same time it affords an excellent opportunity to counsel with the young men on other personal problems.

The men of the Young Farmers' Association at Canal Winchester make use of the gymnasium and kitchen of the school. Volleyball or basketball is played after most of the discussion periods and about once per month the group has refreshments. Some of the men who do not care for sports will remain in the agricultural room to talk about some current problems, while others will look over some magazines, books or bulletins.

Other phases of the program have been special meetings dealing with such problems as "Venereal disease," "Moral problems of young men," "Buying life insurance," and "Farm safety." Exchange visits with other groups of young farmers, joint meetings with the adult farmer group and meetings with the F.F.A. boys have been held frequently. Last summer the young men took an all-day tour to visit two outstanding farms on soil conservation practices. This was a follow-up of some discussions that were held during the winter months and a fore-runner for other discussions.

A livestock show and sale was held at Wilmington, Delaware, on November 5, to which F.F.A. and 4-H Club members made consignments.

Professional

S. S. SUTHERLAND B. C. LAWSON

The role of in-service teacher education

K. W. KILTZ, Teacher Education, Purdue University, Lafayette, Indiana

K. W. Kiltz

THE two major objectives of this article are: (1) To review previously accepted phases of in-service teacher education in relation to the needs of teachers of vocational agriculture in the post-war period, (2) to emphasize certain phases of in-service education in which further development and improvement seem possible and desirable.

In this article teacher education is defined as the means whereby an individual is guided in the development of his abilities—including attitudes, knowledge and skills—to the extent that he will be able to develop desirable abilities in the persons he teaches. In-service teacher education is the training that the individual receives after he is employed.

The article by Kiltz is the fourth in a series of professional contributions dealing with the Role of *Vocational Education in Farming.* Previous contributions in the series were carried in the September, November, and December, 1947, issues.

The Functions of In-Service Teacher Education

Among the more important functions of in-service teacher education are the following:

1. A continuation of the development of the individual's teaching abilities after he is employed. This will include—
   a. The development of new abilities in teaching
   b. The further development of the ability of the teacher to use and improve his pre-service developed abilities
2. The development of the ability of the teacher to adjust his program to changing needs which may result from trends or from special services demanded of the program
3. The further preparation of the teacher in the area of technical subject-matter
4. The improvement of the professional attitude and interests of the teacher

The Need for Expansion of In-Service Teacher Education

There is a definite need for an expansion and improvement of in-service teacher education at this time. This need results, in part, from such factors as:

1. A heavy demand for teachers of vocational agriculture with an inadequate supply of well-trained teachers. The demand is intensified by the eagerness of people in many communities to re-establish departments that were closed during the war and by the desire of people in other communities to establish new departments. The demand for teachers is further increased by the program for training veterans in agriculture.

   To meet these demands there are several types of teachers, such as, (a) professionally trained men who have previously taught vocational agriculture but who have been out of teaching for one or more years, (b) professionally trained men who have never taught and who have been away from their training program for one or more years, (c) special teachers who may be deficient in both professional and technical training, (d) recent professionally trained men with little teaching experience who are now teaching, (c) men with considerable teaching experience who have remained in teaching but are contemplating changing positions.

   It is probable that the teachers in each of these classifications are in need of in-service training.
2. An increase in the complexity of the program in vocational agriculture due to the introduction of additional training services and to the continuous accumulation of instructional content.
3. The elevation of educational standards and license requirements for teachers of vocational agriculture.

The More Common Phases of In-Service Teacher Education

The field of in-service education may be classified into six phases. These phases are: (1) organized classes, (2) group conferences and forums, (3) demonstration and development centers, (4) written and illustrative materials, (5) research, (6) itinerant teacher training.

The Organized Class Phase

Organized classes as a part of in-service education for teachers of vocational agriculture may have several characteristics as follows: (1) Such classes may be on a college campus or at some center out in a state, (2) The classes may be for credit or non-credit, (3) The content may be professional or technical.

The types of classes that are offered will be determined by such factors as (1) the personal plans and training needs of the teachers to be trained, (2) the educational standards for teachers of vocational agriculture in the state, (3) state licensing regulations.

One of the first problems in connection with organized classes is the attitude of teachers toward such classes. It recent years the attitude of many teachers of vocational agriculture has seemingly been one of rejection of campus classes. Doubtless, there are a number of things that affect the attitude of teachers toward these classes. Some of these things may be listed as follows: (1) the extreme shortage of qualified teachers since the immediate pre-war period resulting in easy placement in teaching, (2) the availability of jobs other than teaching, (3) the fact that instruction in vocational agriculture is organized on a 12-months basis, (4) the fact that many of the problems of greatest significance to the teacher of vocational agriculture are to be found in his own community and that too often college courses ignore the fact or are unable to deal adequately with such specific problems.

Without doubt, teachers of vocational agriculture in the future will be more receptive to advanced training than in the past. This will result from (1) increased competition for jobs, (2) increased educational standards and license requiments in states, (3) more liberal salary allowances for additional training, (4) the provision for some classes in the field.

Advance Training Required

In Indiana the last state plan for vocational education in agriculture provided that teachers of vocational agriculture graduating after July 1, 1942 must take 12 hours of advanced professional and technical training within a four-year period after securing a provisional certificate to teach. The war prevented this regulation from functioning but in the more normal period of the future it is expected to function. The trend now is toward the requirement of a Master's degree.

Developments such as these will not only cause teachers to enroll in classes but will also challenge the leaders of teacher education to develop adequate and practical plans for such training.

To help meet these training needs, the following proposals are offered as possibilities for future development in relation to campus classes as a part of in-service education for teachers of vocational agriculture:

1. The state plans for vocational agriculture should provide that the teacher be employed on a 12-months basis but that one month of each 12 may be used for self-improvement and vacation. At the present time in Indiana the plan provides that the teacher may take three weeks from the job for training. However, this provision is not defined in the teacher's contract, with the result that many school officials and other persons in the local community are often critical of teachers if they desire to leave their jobs for as long as four weeks during the year, even for self-improvement. Many conscientious teachers are afraid of criticism if they ask to be away from their jobs for this period of time.
2. A second proposal is that colleges continue to offer intensive campus courses of from one to four weeks duration for teachers of vocational agriculture. Most of these courses should be organized for graduate credit. During this present period, refresher courses for men who have been away from teaching and special courses for special or emergency teachers may be needed.
3. A third proposal is that a state might make provisions for substitute teachers to replace the regular teacher for a summer session or for one or more regular semesters during which time the regular teacher can take advanced training. Substitute teachers might be drawn from advanced trainees in agricultural education or from a surplus of trained teachers if such a surplus exists.

   This proposal would require coordinated planning between colleges and state departments of education and an acceptance of the plan by local school officials.

   If trainees in agricultural education are used as substitute teachers, they should receive college credit. The trainee, himself, would be receiving a type of in-service training as it would be necessary for teacher trainers and state supervisors to give careful guidance to his instruction.

Let us now turn our attention to the field classes that may be a part of the in-service education. The factors that are favorable to field classes are:

1. Such classes would make it unnecessary for the teacher to leave his community for an extended period of time.
2. The instruction could be adjusted to the specific needs of teacher situations. It could be based upon facts and circumstances in a school area that could be explored by the teacher while the course is in progress.

The factors that are unfavorable to the field classes are:

1. Special plans and financing would be needed to provide adequate teaching materials.
2. The enrolled teacher's attention might be diverted from the course by the demands of his job.
3. It might be difficult and sometimes uneconomical to provide suitable instructors for field classes.
4. The instruction would be more intermittent than with campus classes and the enrollees might not study effectively.
5. The teachers might be located at considerable distance from each other, thus making it difficult to organize a class in which an adequate number would enroll.

No estimates of the relative costs of field courses and campus courses for the enrolled teacher or for the institution that offers the training are made in this article. However, the relative costs would be an important factor to consider.

Having pointed out some of the favorable and unfavorable factors in connection with field courses, the following proposals are made:

1. Certain types of professional subject-matter might be taught adequately in the field. The subject-matter might include areas such as (a) specific course of study building, (b) program building, (c) F. F. A. organization.

   An itinerant teacher training service could be used to teach such courses. This teaching responsibility would give more definite structure to the itinerant service and would give the itinerant teacher trainers an opportunity to render service through organized instruction.
2. A second proposal is that certain types of technical subject-matter might be taught adequately in the field. This would involve careful planning with the college of agriculture, including plans for financing the instruction and for the use of college of agriculture personnel for instructing.
3. A third proposal for field courses is that the state plan for vocational agriculture might indicate certain professional courses which teachers of vocational agriculture could take at centers with teachers of other subjects. These courses might be in such areas as general education, sociology and psychology. Such courses should be limited in number but the teacher's opportunity to enroll in them would make it easier for him to obtain part of his advanced training. Cooperative planning between colleges and the state department of education would be needed for this proposal.

   Most of the field courses that are planned for teachers of vocational agriculture should be so organized as to make graduate credit possible. A plan might be developed to permit the teacher to obtain 50 per cent or more of the credit necessary for a Master's degree through field courses.

   A few non-credit field courses might be planned for special teachers who need special preparation.

The Group Conference and Forum Phase

State, district, multiple-county, county and local conferences and forums may be used effectively for training teachers of vocational agriculture in service. Such conferences and forums may range from a few hours to several days in length. The attendance might include one teacher, his school administrators and his advisory committee, or the attendance might include a number of teachers with or without other persons present.

In connection with the group conference and forum phase of in-service education, the following suggestions are made:

1. All conferences should be carefully planned. Since instructional content requires extended consideration, some conferences should be planned for a period of time as a series of meetings with a continuity of effort. The conferences should be planned with the aid of teachers. If the conferences are to deal with technical content, representatives of the college of agriculture should help with the planning.
2. State and district conferences should be used primarily by the state supervisor for purposes of supervision and for the consideration of problems involving policy, program expansion and adjustment, and program deficiencies.
3. The smaller conferences and forums should be used primarily for teacher education. This training may be professional or technical. If it is professional, the teacher training staff should bear the major part of the responsibility. If it is to be technical, arrangements should be made with the college of agriculture to do the instructing.

   Conferences and forums probably should not carry college credit.

Demonstration and Developmental Centers Phase

It is doubtless common observation that many of us do not seem fully to grasp an idea until it is placed before us in concrete form. Program activities and teaching procedures may be treated carefully in training classes and conferences but often the teacher seems unable to grasp the thought or to translate it into action. It is proposed that:

1. As rapidly as possible demonstration centers in vocational agriculture should be developed in selected typical schools. These centers should be numerous enough and so located that they are accessible to all teachers in different parts of the state.
2. These centers should receive special guidance from the state supervisor and the training staff so that complete, balanced and outstanding programs of vocational agriculture are developed in them.
3. Superior teachers should be employed in such centers. The plan should provide for increased salaries to the teachers and for extra reimbursement to the school corporation where the center is located.
4. These centers should be used for field conferences of teachers and they might also be used as apprentice centers for agricultural education trainees. The centers should have patterns of organization and achievement in vocational agriculture that can be cited to teachers and trainees in writing and orally.

   This phase of in-service education offers one of the greatest opportunities for improving vocational agriculture.

Written and Illustrative Material Phase

There is an insufficient development of well-planned written and illustrative materials for teachers of vocational agriculture. In connection with this phase of training the following suggestions are offered:

1. One or more education staff members in each state should be charged with responsibility in this phase. All staff members should have opportunity to participate in it if they wish to do so.
2. Ample funds should be allocated to this activity.
3. Well-defined working relationships with the college of agriculture should be developed.
4. Some coordination of production of materials of this type might be planned for several adjacent states.

The Research Phase

Adequate research would help determine needs and effective methods in vocational agriculture and would also help measure progress in the program. Well-planned research is basic to further development of the program. The research program may become a definite part of in-service education in the following ways:

1. A research plan for a state should be developed by the research leader

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Farming Programs

C. L. ANGERER

Some observations on supervised farming programs

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Milo J. Peterson

IN THE development of vocational education in agriculture there are certain aspects of major importance. The most significant feature is the supervised farming programs of the boys through which the students are launched on their way toward establishment in farming. It is through supervised farming that the teaching comes to a focus and becomes a part of the boy's experience and equipment with which to meet new problems. The teaching of agriculture does not become truly functional if it is centered in the classroom. It must have its setting on the home farms of the boys and the teacher must shoulder primary responsibility for supervision. Conducting a satisfactory program of supervised farming is a three-fold responsibility involving the boy, his parents, and the teacher.

Characteristics of Superior Programs

Certain qualities have come to be recognized as contributing to the success of a supervised farming program. A review of current literature reveals that the absence of certain common characteristics weakens the work while their presence makes for progress toward establishment in farming. The analysis of published studies and a consideration of the objectives of agricultural education seems to justify the selection of certain basic characteristics common to all superior programs of supervised farming. They are:

1. Size
2. Adaptation
3. Ownership or managerial responsibility
4. Continuity
5. Expansion

If the supervised farming program is of reasonable size, adapted to the community and the home farm organization, if it is owned or managed by the boy and continued from one year to the next, expanding as it develops, then *that* program is leading the student toward establishment in farming.

There are certain procedures and situations which tend to encourage the development of desirable farming programs. Keeping complete records is a practice closely associated with desirable supervised farming. The more individual conferences between teacher and student while the work is being planned, the better are the chances for a good farming program. The same is also true regarding supervisory visits to the farm by the teacher. If the teacher leaves a written list of suggestions with the boy upon the conclusion of a farm visit, it has a definitely desirable effect on the boy's work. Farm background is important and unless the boy lives on a farm, he is under a severe handicap insofar as progress in agricultural education is concerned. The highest type of farming program is developed by the boys living on their fathers' farms.

If a superior farming program is expected, the boy should have serious intentions to farm for a living. The more definite plans he may have concerning his establishment in farming, the more likely he is to have a desirable program of supervised farming. Financial progress also goes hand in hand with good farming programs, and students whose assets have increased most during the time they have been enrolled in classes of vocational agriculture become satisfactorily established in farming at a more rapid rate than others. It is important that a boy get off to a good start in order that he might develop his own enterprises at home and raise his occupational status above that of merely having his living furnished. Economic factors have a distinct bearing on the results, and the best supervised farming programs are found on farms somewhat above average in size and in rates of produciton for crops and livestock.

Cooperation of Parents

While there is considerable variation, sufficient evidence is at hand to warrant the assumption that a high standard of living and a medium-sized family are conditions favoring the development of desirable supervised farming programs. Small families under four members or large families over seven members, do not appear to be conducive to the most rapid progress. Of incalculable importance is the understanding the parents have regarding agricultural education. The parents of the boys must know the teacher and understand the objectives of the work if the highest type of supervised farming is to be conducted. A safe and conservative estimate based on a review of research is that in at least half of the cases parents do not know the teacher of agriculture. However, in that group where superior farming programs are found, parents are acquainted with the teacher. Given this acquaintance with the teacher and an understanding of the work in vocational education, the parents must be of the opinion that supervised farming is worth the money and the time necessary for its execution. With this attitude, parent-teacher-student cooperation can be, and is, achieved.

Methods of teaching are of fundamental importance. Unless the teaching is geared to the farming programs of the individual students, little learning of a vocational nature takes place. This involves the development of a course of study that permits the organization of core material plus adequate allowance for individual study and application. In the classroom as on the farm it is the boy that is pivotal, and he must be permitted and encouraged to develop in accordance with his own capacity and opportunities.

Suggestions for Consideration

The foregoing observations naturally lead to the suggestion of certain recommendations for consideration as we begin our fourth decade of Federal support for vocational education in agriculture.

1. Entrance into the course of study in vocational agriculture should be limited to boys with adequate facilities for conducting supervised farming programs.
2. Only those boys who have a definite interest in agriculture as a vocation should be enrolled in courses beyond Agriculture I.
3. There should be a guidance program or some effective means of selecting boys for training in vocational agriculture.
4. The emphasis throughout the program should be more vocational in function, and there should be less purely academic agriculture.
5. Teacher-parent-student cooperation should be vastly improved. Teacher-class activities should be decreased in the interest of individual conferences and the development of long-time plans for supervised farming. There should be more adequate supervision of the farming programs of the boys.
6. The need for a parent education program should be met. Parents of boys studying agriculture have every right to know and understand the objectives of the work, and the teacher should see that this is done.
7. The course of study should be based on a system of upgrading and increasing specialization as the boy goes through the courses from Agriculture I to Agriculture IV.
8. Teachers of agriculture should be relieved of such chores as supervising a study hall. They should not be asked to conduct other classes that are given at the expense of vocational instruction in agriculture.
9. The supervised farming program should be the core of the entire program of work. Unless this is done, the real meaning and significance of agricultural education becomes lost in the mass of non-vocational activities which attach themselves to the program. The purpose of vocational agriculture is to train boys for proficiency in farming. The means to this end are the supervised farming programs.

The eighth annual convention of the California Young Farmers is being held at Modesto, February 5-6-7.

Basing instruction on farming programs

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"SUPERVISED FARMING" is a term familiar to all teachers of vocational agriculture. To many it may be an integral part of vocational agriculture and to others it may mean just a project. Supervised farming has traveled far since its inception in the Smith-Hughes Act of 1917 which stated "that such schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least 6 months per year." However, in another part of the same act the purpose for vocational education in agriculture was "to fit boys for useful farming." Too often, however, their requirements were fulfilled by only carrying a project.

Plans Made In Summer Session

The terms "supervised farming and cross-section method" took a new meaning to those teachers who were enrolled at Pennsylvania State College in Agricultural Education 524v, which was given the first three weeks of the main summer session (1947). The course was taught by Doctor Brunner and Doctor Anderson for the first two weeks, and during the third week by Doctor George Deyoe, Professor of Education at Michigan State College. During the three-week period the work consisted of class discussion, a demonstration, a panel discussion, lectures and work shop conferences. The final assignment was to prepare annual teaching plans based on the supervised farming programs of the boys in a particular school or community.

The term "supervised farming" really means "farming under supervision of the instructor of vocational agriculture and a 'project' becomes a unit of the individual's farming program."[1]

Many teachers of vocational agriculture have been using the term "cross-section method." Usually they have simply cross-sectioned the text books which were available and taught lessons from each enterprise in different years. Sometimes the dominant agricultural enterprises in a community determined the emphasis put on each enterprise. Now, however, it seems we should think of cross-sectioning the supervised farming programs of the boys in the class receiving instruction.

Using the cross-section method entails a great deal of planning, preparation, and foreseeing anticipated needs. If teachers of agriculture will assume their full responsibilities, teaching will not be a dispensing of the subject matter but it will be providing experience in the types of thought and action which are basic to success in farming. This then can be considered as truly vocational education.

The content of any course of study in vocational agriculture must be derived to a large extent from the student's needs in terms of his supervised farming program, and from the problems that exist on his home farm.

Individual Needs

The teaching opportunity which presents itself in vocational agriculture demands that the instruction be based on the needs of the individual boy and not upon the presentation of subject matter which the teacher thinks is good for all students. Very little learning takes place if there is not a need for the information. Therefore, it becomes the duty of the teacher to assist the students in selecting the essential needs and converting them into interests.

In order to use the cross-section method much detailed information must be gathered about the locality or the school service area. Some of this information must be obtained by the teacher and some by the student.

The data which the teacher must have are of two types. A very concise picture of the community can be secured by studying the latest Agricultural Census Reports.[2][3] Having census data not only provides a picture of the community but should also give, especially to a teacher, confidence in himself and his work, and also the confidence of the boys and farmers in the community because he already sees their needs and problems.

The teacher must also look for problems and jobs which will provide him with teaching material about the boy's home farm. By observing and recording such data the teacher can often suggest jobs and problems to boys. He must be on the look-out for such things as needed farm machinery, use of labor-saving devices, building repairs and improvements, livestock improvements, crop improvements, and soil conservation problems.

In order to make teaching functional, much of the material must be secured by the student. Each year a detailed survey of the farm should be made. This will provide the basic subject matter. In addition to this, the beginning student should plan a well balanced supervised farming program, which should include productive enterprise projects, improvement projects, and supplementary farm practices. This plan should be made for a period of at least five years. Prior to this work considerable time should be devoted to a unit of instruction on "Planning My Farming Program."

The next step in the cross-section procedure is to set production goals for the projects. These may be either individual or as class goals. Too often a boy has a limited concept of what he is to achieve under his conditions and facilities available. Setting of goals will motivate the student to do better work and each year to achieve higher goals and to keep accurate and useful records. The formulation of goals will lead the boy into asking himself such logical questions as: "What do I need to be able to do?" or "What do I need to learn in order to reach these goals?"

For example, production goals for swine projects would be the number of pigs farrowed per litter, number of pigs raised per litter, weight per litter at 56 days, weight per pig at 56 days, feed per 100 pounds gain, cost per hundred pounds gain, and average daily gain. The use of production goals will provide subject matter for each year of high school work, because the student will always be interested in knowing how he can improve over his work of the previous year.

A question that may still be in the minds of many is, how will a teacher include material which is not included in the teaching plan, perhaps because there are no projects listed in a particular enterprise, but which represent problems in the community and should be included in the teaching plan. The first criteria to determine its inclusion is "Does the student have any need for this material?" If there is a definite need it may be introduced as a group project. If there is a need for more poultry in the community a group poultry project may be conducted. If soil conservation is a problem a group project may be conducted in order to stimulate the boys to see the need. The progress and success of the program will depend not only upon the classroom instruction but also upon supervision and evaluation. Supervision must be well planned and the teacher of agriculture must fully understand each pupil and his home farm condition. Supervisory visits should be well planned in order to be helpful to the student. Each time the teacher makes a visit he should leave something of value to the boy.

Evaluation of Farming Programs

Evaluation of the program will be determined by how the teacher can see the student's program progressing. The questions one must ask are: "How well is the student following his long-time plan?", "Is the student meeting his net production goals?", "Is he applying his classroom knowledge in his farming program?"

The philosophy of providing experience in education is not new. It has been subscribed to by many prominent educators. John Dewey said, "All genuine education comes about through experience." And, of course, the principle applies not only to education for high school boys in vocational agriculture. It is applicable also to teachers and their practice. The experience which has been gained since the pasasge of the Smith-Hughes Act in 1917 has evolved into the cross-section method based on supervised farming programs and home farm problems.

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[1] *Directing Vocational Agriculture, Day-School Students in Developing Their Farming Program*, Voc. Div. Bul. 225, Agricultural Series No. 56, U. S. Office of Education, Washington 25, D. C.

[2] Pettet, Z. R., Lathrop, F. W., and Johnson, E. D., "Census Facts in War and Peace," Agricultural Education Magazine, Volume 15, No. 7, Jan. 1943, pp. 124-125.

[3] Sixteenth Census of the United States, 1940, Agriculture, "Uses of the 1940 Census Data in Schools," U. S. Dept. of Commerce, Bureau of Census, Washington 25, D. C. Free.

Studies and Investigations

E. B. KNIGHT

An experimental evaluation of certain audio-visual aids in vocational agriculture[1]

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Ralph R. Bentley

THE PURPOSE of this experimental study was (1) to determine the relative effectiveness of certain audio-visual aids on information learning and on the ability to solve problems or make application of principles in vocational agriculture and (2) to determine the relative effectiveness of certain audio-visual aids on the retention of these two types of learning in vocational agriculture.

The Design of the Experiment

The design of this experimental study consisted of the experimental procedure and statistical analysis. The experimental procedure included (1) the selection of the cooperating schools, (2) the selection of the experimental projects, (3) the selection of the audio-visual aids, (4) the independent experiments, (5) the experimental and control groups and (6) the testing program.

The selection of the cooperating schools.—The schools which cooperated in this study were selected with the aid of the Agricultural Education staff of the University of Minnesota and the Minnesota State Department of Agricultural Education. The cooperating schools were located in the south one-half of Minnesota and were selected on the basis of the following criteria: (1) the agricultural area in which the school was located, (2) the ability and success of the local teacher of agriculture and his probable interest and willingness to cooperate in the proposed experimental study, (3) the number of students enrolled in the agriculture classes of the local school, (4) the cooperation which might be expected from the local school.

The selection of the experimental projects.—The instructional units which served as the basis for the three experimental projects were in home gardening, swine production, and pasture production. These units were selected because (1) they are generally taught to classes in vocational agriculture, (2) suitable audio-visual aids were available for these units, (3) it was possible to measure the effectiveness of audio-visual aids in both crop and livestock enterprises and (4) these units are usually taught to students of different ages.

The selection of audio-visual aids.—The audio-visual aids used in this study were selected by the writer who was assisted by specialists in audio-visual education at Iowa State College and the University of Minnesota. The following factors were taken into consideration in selecting the audio-visual aids: (1) the educational level for which they were suited, (2) the subject matter content, (3) the photography and technical construction, (4) the sound effect when used, (5) the color of the pictures and, (6) the physical condition of the film or slides.

The independent experiments.—The investigation was made in eight different schools and consisted of twelve separate and independent experiments. Each of the twelve experiments had its own experimental and control group. Six of the experiments were in the Home Garden Project, four in the Swine Production Project, and two in the Pasture Production Project. Although the independent experiments, in each of the three experimental projects, were complete experiments within themselves there were certain features which were common to the independent experiments in each experimental project. The common features were (1) all students in a given experimental project were taught the same instructional unit, (2) all students were administered the same tests with the exception of the retention test which was not administered in certain independent experiments, (3) the experimental groups in each of the experimental projects had the same audio-visual aids substituted for part of their instruction and (4) the instructional time was equal for the experimental and control groups in each of the independent experiments.

The experimental and control groups.—In each independent experiment there was an experimental or audio-visual aids group and a control on non-audio-visual aids group. Where two sections of the same agriculture class were taught in the same school one section was used as the experimental group and the other as the control group. The treatment in each case was determined by lot. Most of the experiments, however, were conducted in schools where there was only one class section. In such instances the experimental and control groups were obtained by dividing the classes at random. The instruction of both groups, in each of the independent experiments, was under the supervision of the same instructor and the classes which were divided were taught as a unit except when the audio-visual aids were shown.

The testing program.—The Terman-McNemar Test of Mental Ability was administered to all students who participated in the experimental study and the results of this test were used as one of the independent matching variables. Achievement in the three experimental projects, Home Gardening, Swine Production, and Pasture Production, was measured by achievement tests which were constructed by the writer and were designed to measure the objectives of each respective unit. These tests were used at the beginning as pre-tests and again at the end of the experiment as post-tests. The achievement tests were also used as retention-tests in some of the Home Garden and Swine Production experiments.

The Statistical Analysis

The statistical techniques used in this study were as follows: (1) the means and standard deviations, (2) tests of homogeneity of data for two or more groups. When it was necessary to test the homogeneity of data for two groups the "t" test was used to determine the significance of the difference between means and the "F" test was used to determine the significance of the difference between variances. When it was necessary to test the homogeneity of data for more than two groups the analysis of variance was used to determine the significance of the difference between means and the Welch-Nayer (L_4 test) was used to determine the significance of the difference between variances. (3) The data of independent experimental groups in each experimental project were pooled whenever it was shown that their means did not differ significantly and that their variances were homogeneous. The control groups were treated similarly. (4) The analysis of variance and covariance was used to test the significance of the difference between the means of the experimental and control groups on the retention test. (5) The Johnson-Neyman[1] technique was used to compare the pooled experimental groups with the pooled control groups in the Home Garden and the Swine Production experimental projects. This technique makes possible the comparison of the means of the two groups after their adjustment for any differences in the basic characters of matching which in this experimental study were the Terman-McNemar Test of Mental Ability and the achievement pre-test scores. If there proves to be a non-significant difference between the means the analysis is not carried further. However, if there is a significant difference between the means after adjustment then the analysis is continued to set up a region of significance. The region of significance enables one to determine all the systems of matching variables for which a difference would be found between the experimental and control groups. That is, it determines for what kind of students as defined by the matching variables a significant difference would be found in favor of one or the other of the experimental and control groups.

[1]Abstract of study submitted in partial fulfillment of the Ph.D. degree at the University of Minnesota.

[1]Palmer O. Johnson and J. Neyman, "Tests of Certain Linear Hypotheses and Their Application to Some Educational Problems." *Educational Research Memoirs*, I, pp. 57-93, 1936.

Conclusions

The conclusions resulting from the three experimental projects in this investigation are as follows:

1. The Home Garden Experimental Project.
   a. The mean of the experimental or audio-visual aids group was significantly higher than the mean of the control or non-audio-visual aids group or informational learning.
   b. The region of significance indicated that the mean of the experimental group may be said to be significantly superior to the control group throughout the range of mental ability of the students and for the average or below average student in informational learning.
   c. The mean of the experimental group was not significantly different from the mean of the control group in applicational learning or problem solving.
   d. In the two independent experiments where retention was measured the means of the experimental and control groups were not significantly different in either informational or applicational learning.
2. The Swine Production Experimental Project.
   a. The mean of the experimental group was not significantly different from the mean of the control group in achievement as measured by the Swine Production Achievement Post-test.
   b. The mean of the experimental group was not significantly different from the mean of the control group in achievement as measured by the Swine Production Achievement Retention-test.
3. The Pasture Production Experimental Project.
   a. The mean of the experimental group was not significantly different from the mean of the control group in informational learning.
   b. The mean of the experimental group was not significantly different from the mean of the control group in applicational learning or problem solving.

Implications

In conclusion we wish to summarize by indicating certain implications which appear to be warranted as a result of this study of audio-visual aids.

1. Audio-visual aids which are developed for use in vocational agriculture classes would be more effective as aids to learning if they were designed to supplement rather than repeat the visual experiences the students have had.
2. Audio-visual aids which are designed to teach new ideas or principles should be accompanied with adequate interpretation either in the sound recording or by the instructor.
3. The present catalog descriptions of audio-visual aids are not dependable guides to follow when selecting audio-visual materials that will be effective aids to learning in classroom situations.
4. If we are to secure audio-visual aids that actually enhance learning, careful experimental studies should be made testing their value before they are made available for instructional purposes. An analogy may be made here from the field of agriculture. Namely, no hybrid corn is recommended without a careful experimental measure of its yielding ability. Why shouldn't the same critical attitude be exercised in the selection of audio-visual aids which are to be used in learning situations?

Role of in-service teacher education

(Continued from page 133)

with the help of supervisors, teacher trainers and selected teachers. Important research problems should be designated as a part of the plan. The methods of research should be outlined and the plan should be so organized that the outcomes of the research will be significant to teachers in service and to the program of vocational agriculture.

2. Supervisors, teacher trainers, teachers and trainees may help assemble and interpret data.
3. Some teachers, supervisors and teacher trainers may wish to plan studies of their own. In such cases the research leader should be able to provide guidance.
4. Research results should be made available to teachers and staff members for individual use and for use in training classes and conferences. Ample funds should be allocated to research so that data can be assembled and results made available for distribution.
5. Some coordination of research among several adjacent states might be desirable and practicable.

The Itinerant Teacher Training Phase

The itinerant teacher training service has been mentioned in connection with some of the other phases of in-service education. To conserve space, these comments will not be repeated in detail. However, the following pertinent facts about itinerant teacher training seem worthy of emphases:

1. There should be close coordination between itinerant and resident teacher training to insure the most complete and effective training outcomes.
2. The itinerant phase of in-service education should be planned carefully so that it has definite activities, objectives and procedures defined.
3. It is believed that an adequate itinerant teacher training program would require a teacher trainer for 40 or fewer employed teachers.

Challenge of changing agriculture

(Continued from page 129)

collapse of the limited stability that exists in Western Europe today.

I have painted a sorry picture. I have not offered any constructive suggestions. May I try to do so now? I am convinced that our group can help to keep the world right side up. We can do so by beginning at home working with the people we know and understand. We can continue to teach farm boys and their fathers the skills which they must have to produce successfully. But we must do more than that. We must teach management skills as well. We must help farmers and ranchers to adjust their production to meet changing demands. If we find ourselves afraid to venture very far from safe ground, if we feel that farmers and ranchers will not respect our opinions than maybe we should become the pupils of the farmer and the rancher.

We should set up classes of boys who do not live on the land, but whose fathers do own it. We should begin to develop new courses of study in agriculture for these boys and their fathers who own the land but do not live on it.

We can help get something done to increase our supply of underground water. We can assist land owners and land operators to realize that nature controls water by providing a cover of vegetation for the land at all times. We can help them select, plant, and increase pasture and range grasses, legumes, small grains, and other temporary grasses for the plowed lands. We can help them to appreciate and use stubble mulch, or as one teacher quotes his farmers "do 'trashy' farming."

We can point out the relationship between the elements in our soil and the elements that animals and men need for body maintenance and economical growth or good health.

We can teach farm boys and non-farm boys how to select farm equipment that can be profitably used. We can teach them how to select and use electrical equipment.

We can teach them how to market their products. Sometimes we become discouraged when we have the experience of one Rio Grande Valley teacher, He taught that the Smith-Doxey Act provides classing and grading service for cotton producers. One of his boys produced two bales on three acres. It was 1 3/32-inch staple strict middling cotton. The boy had to sell it hog round.

We can also teach enough about the world situation to enable boys and men to understand the importance of exports in the maintenance of favorable prices for agricultural products. We can teach them the simple fundamentals of all international trade: foreign nations can pay for our beef, pork, wheat, fruit, automobiles or electric motors with American dollars. There are only four ways for them to get American dollars, as a gift, as a loan, with gold or with goods and services. We can help them to realize that they cannot live alone, that they must plan and operate their farm or ranch business as business men in a highly competitive world.

Community services in a South Carolina Negro school

GABE BUCHMAN, Teacher Education, A. & M. College, Orangeburg, South Carolina

Gabe Buchman

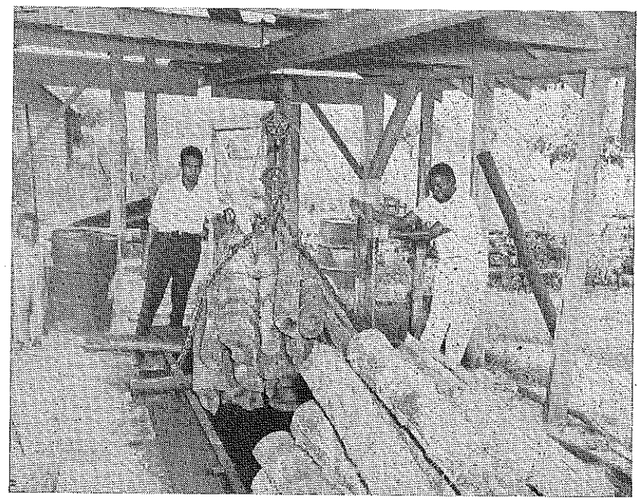
THE GREAT *Branch Community*. The land owners and tenant farmers in the Great Branch community fully appreciate the valuable services they receive through the community cannery, creosote vat and farm shop operated as a part of the training program projected by the department of vocational agriculture in the local school. The school is centrally located in the Great Branch community, which is situated ten miles west of Orangeburg, South Carolina. The community, which is made up largely of Negro farm owners, has succeeded in establishing and operating several successful community services.

The Community Cannery. The canning plant in this community has become a center for adult education, and every family takes a pride in the cannery. Before actual canning is done, the farmers meet at the cannery for instructions in selecting, harvesting, preparing and canning their farm products. During the canning process they are also instructed in the operation and care of the equipment and in the maintenance of the cannery in general. The canning plant is available to the community the entire year for the canning of meats, fruits, and vegetables. During the past two canning seasons 10,350 quarts of food were canned. Of this number there were 225 quarts of meat, 5,123 quarts of vegetables, and 5,002 quarts of fruit canned.

The Creosote Vat. An important cooperative venture for the farmers of this community is the creosote vat, which is 4 feet wide, 4 feet deep, and 20 feet long. It is adequate in size for the farmers to treat the posts, poles and lumber used in the community. The steam boiler which is used in operating the canning plant is also used for heating the creosote in which the dried posts and poles are dipped. The farmers are making maximum use of the vat, for they have learned that this treatment greatly lengthens the life of fence posts and lumber. Uncreosoted pine posts in this area ordinarily last only about two years, while creosoted posts last from fifteen to twenty years. During the past summer 1850 board feet of lumber and 1775 posts were creosoted in this community.

The Community Shop. The farm shop is a busy center in the Great Branch community. The boys learn in this shop to make much of the needed equipment and to do the repair jobs for the school and for the farm home. Instruction is given in proper care and use of tools. The adult farmers in the community also bring their farm equipment to the school for repairs and seldom find it necessary to take a repair job elsewhere to have it done, because they have acquired sufficient skill to do their own work in the farm shop that is owned and operated by the community. During the past year 102 adults repaired 90 pieces of farm machinery and 18 trucks and constructed 2 feeders, 3 wagon bodies, 12 axe handles, and 3 plow beams.

Professor Robert Ashley, Jr., is principal and agricultural teacher of the Great Branch School. The people of the Great Branch community have learned from experience to look to the department of vocational agriculture for the solution of their farming problems.



Professor Ashley demonstrates to a farmer how the posts are placed into the creosote vat and how they are removed after being treated.

Canning fruit at the Great Branch, South Carolina community cannery which is located near Orangeburg, South Carolina.

Mr. Leo L. Knuti, State Supervisor of Agricultural Education in Minnesota, is spending the school year at the University of Illinois, doing graduate work in Education, including Agricultural Education, and serving as a part-time graduate assistant.

Fourteen members of the Hollister, California, F.F.A. chapter have formed a poultry brooding cooperative and plan to brood 2,000 birds per year. After the birds are brooded, they will be distributed among the members for raising at home.

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t—E. W. Garris, Gainsville
t—W. T. Lofton, 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—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—Ed. Lovell, Pocatello
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
as—H. R. Damisch, Springfield
t—H. M. Hamlin, Urbana
t—G. P. Deyoe, 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—Ben H. Watt, Indianapolis
s—H. B. Taylor, Indianapolis
t—B. C. Lawson, Lafayette
rt—S. S. Cromer, Lafayette
it—K. W. Kilts, Lafayette
it—H. W. Leonard, Lafayette
it—E. E. Clanin, Lafayette
it—I. G. Morrison, Lafayette

IOWA
d—L. H. Wood, Des Moines
s—H. T. Hall, 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
as—J. J. Stovall, 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
as-t—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. C. Cook, East Lansing
t—Paul Sweany, East Lansing

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

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

MISSISSIPPI
d—H. E. Mauldin, Jr., Jackson
s—A. P. Fatherree, 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—Arthur B. Ward, 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
s—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
t—W. R. Kunsla, 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—F. J. Ruble Columbus
ds—D. R. Purkey, Columbus
t—W. F. Stewart, Columbus
t—H. C. Kenestrick, Columbus
t—C. E. Rhoad, Columbus
t—Ralph E. Bender, 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—Glenn Z. Stevens, 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 Benriquez, Arecibo
ds—Juan Robles, Cayey
ds—Andres Ramirez, Mayaguez
t—Lorenzo G. Hernandez, Mayaguez

RHODE ISLAND
d-s—George H. Baldwin, 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. You, 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. Manire, Austin
as—R. Lano Barron, Austin
as—George H Hurt, Austin
ds—O. T. Ryan, Lubbock
ds—Vannoy Stewart, Commerce
ds—C. D. Parker, Kingsville
ds—A. B. Childers, Mart
ds—O. M. Holt, College Station
ds—W. E. Williams, Alpine
ds—J. B. Payne, Stophenville
ds—L. I. Samuel, Arlington
ds—J. A. Marshall, Nacogdoches
ds—T. R. Rhodes, Huntsville
t—E. R. Alexander, College Station
t—Henry Ross, College Station
t—L. V. Halbrooks, College Station
sms—W. A. Sherrill, 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—L. M. Hargrave, Lubbock
it—Feral M. Robinson, Huntsville
sms—Kyle Leftwich, Huntsville
Nt—E. M. Norris, Prairie View
Nt—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—P. 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. Hanaucker, 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