VOL. VII NOVEMBER, 1934 No. 5

Agricultural Education

Some of the boys of the Wayne County, West Virginia, Chapter of Future Farmers of America with the truck which the Chapter owns and uses in cooperative marketing of products raised.

"Any life that is to be satisfying must possess social usefulness, as well as afford opportunity for self-expression. Happier still the situation when self-expression is made contributory to social usefulness."
— W. M. Jardine

EDITORIAL COMMENT

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

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ENRICHING THE COURSE IN AGRICULTURE

A COURSE that is not a rich course has no place in a program of studies. No doubt, many schools add subjects to their list of offerings when what they should do is enrich the offerings they already have. Spending a little extra money in securing teachers with ability to enrich the courses already offered might often be wiser than securing teachers to teach additional subjects.

If we teachers of vocational agriculture do not make our courses rich, we have no right to ask for a place in the sun. The opportunity is ours. Some teachers, apparently, feel that the course will be rich just because it is agriculture. No, agriculture is not interesting just because it is agriculture. It may be about the deadest thing in the world. There is no magic in the word "agriculture" or in such phrases as "on my home farm" or "in the community." As long as the teacher and boys are dealing only with the familiar, as long as the boys' experiences are not being reinterpreted to them, when the boys are not being given a new world in which to live—there is no teaching worthy of the name.

No teacher has a better chance to have a rich course than the teacher of agriculture. Only a few of the possible ways of enriching the course will be enumerated here. First, there is the opportunity of bringing in selected portions of the sciences that have a bearing on the problems of agriculture. Strip the sciences from agriculture and there isn't much left. In my opinion, the all-day pupil in vocational agriculture should, at graduation, know as much *functional* science as the average pupil who graduates from the science curriculum.

Then there is the mode-of-living side of farming. Vocational agriculture must concern itself more with how to live. Satisfactions of life come only in part from the making of the living. The other side of farm life is as much or more in need of development as the making-of-the-living side. This is appropriate vocational content.

The world is teeming with economic and social problems, selections from which become appropriate content for vocational agriculture.

Production is just as important as it ever was, but a course in agriculture which is only a production course and that taught on a prescription, lack-of-understanding, lack-of-feeling basis, has no place in the modern school.

PROGRAM FOR AGRICULTURAL SECTION

American Vocational Association
Pittsburgh, Pennsylvania, December 5-8, 1934
Thursday, 9:00 a.m., December 6

Theme—*Vocational Education in Agriculture and the New Deal*
Chairman—H. C. Fetterolf, Chief, Agricultural Education, Pennsylvania
"The Philosophy of the New Deal in its Relation to American Agriculture"
"The Function of Vocational Agriculture in the New Deal"
Open discussion of the Session Theme
"The Agricultural Education Magazine"

Thursday, 2:00 p.m., December 6
Theme—*Rural Social Trends*
Chairman—H. F. Cotterman, Professor of Agricultural Education, University of Maryland
"New and Significant Aspects of the American Rural Society"
"Vocational Agriculture in the New Rural Society"
Open discussion of the Session Theme

Friday, 9:00 a.m., December 7
Theme—*The Out-of-School Farm Youth*
Chairman—R. L. Hahn, State Supervisor for Connecticut
"The Characteristics and Needs of Rural Youth in the 16-26 Year Age Group"
"Agricultural Education and the Farm Youth Out of School" (Panel of eight)
Open Discussion of the Session Theme

Saturday, 9:00 a.m., December 8
Theme—*Progress in Agricultural Education*
Chairman—R. M. Stewart, Professor of Agricultural Edution, Cornell University
"New Techniques in Measurement"
"Bases for Improved Practice on Account of Research"
1) Part-time and Evening School Programs
2) Administering Vocational Agriculture
3) Establishing Farm Practice Programs
4) Improving the High School Curriculum
5) Modifying Teacher Training Set-ups.
"The Teacher and Agricultural Progress"
"Developments and Outlook in Agricultural Education"
Business Meeting

The hours and dates for some of the sub-section meetings are as follows: National Research Committee, open meeting, 1:30-3:00 Wednesday, December 5; State Supervisors, 3:00-5:30 Wednesday, December 5; Teacher Trainers, 3:00-5:30 Wednesday, December 5; High School Teachers of Vocational Agriculture, Saturday, December 8, 9:00 a.m.; and Ten-Year Teacher Trainers Breakfast, 7:30 a.m. Friday, December 7.

OUR BOOKLET

A YEAR ago this magazine published a booklet *Contributions of Ten Leading Americans to Education.* The booklet has been widely distributed and read, but plenty of copies are still on hand. Every teacher of vocational agriculture should have this booklet for himself and should, at the modest price, present copies to his superintendent and principal and the teachers with whom he works. Many schools are using the booklet as a basis for faculty meeting discussions. A high school principal writes, "In our professional staff meetings we are planning a series of short talks on distinguished educators. The pamphlet is well adapted to our purpose."

Prepaid prices of the booklet are as follows:

Single copy	$ .10
7 copies	.50
15 copies	1.00
24 copies	1.50
50 copies	3.00

Order from The Meredith Publishing Company, Des Moines, Iowa.

Professional

Conference on Out-of-School Farm Youth

JAMES H. PEARSON, U. S. Office of Education

A CONFERENCE on out-of-school farm youth, called by the Assistant Commissioner of Education, Miss Bess Goodykoontz, was held at the U. S. Office of Education, September 19-21. The conference, which was attended by representative directors, supervisors, and teacher trainers for vocational agricultural education, was for the purpose of formulating a program to meet the specific needs of the out-of-school farm youth. A program could not be worked out in all details but had to be restricted to controlling objectives and guiding principles to be used in making a program effective.

The conference was organized on a discussion basis. When a problem was discussed, a committee was named by the chairman to summarize the discussion in a report which was submitted to the group. Digests of some of those committee reports are herein presented.

An Analysis of the Needs of Farm Youth

The report is limited to those out-of-school farm youth between the ages of 16 and 25 who are planning or will have careers in agriculture or closely related occupations. The report, therefore, deals with needs of individuals in situations in which they find themselves, an analysis to discover further needs, and the responsibility of the vocational agricultural forces to meet some or all of those needs. In order to have an effective program, the youth must be located and carefully analyzed to discover personal characteristics, farming experience, educational experience, financial resources, social experiences, etc. Also, a study must be made of the situation in which he finds himself.

General Objectives

"(1) To develop the ability on the part of farm youth desiring to farm to establish himself in farming on a satisfactory basis; (2) to develop the ability on the part of farm youth desiring to follow an occupation related to farming to establish himself in such an occupation; (3) to develop in farm youth a desirable attitude toward and appreciation of farming as a mode of living; (4) to develop the ability on the part of farm youth to participate in the institutions and activities which are necessary to the maintenance and development of desirable rural communities; (5) to develop on the part of farm youth the understandings necessary in making adaptations to changing social and ecenomic conditions."

The remaining reports deal primarily with those problems which influence the attainment of the above guiding objectives.

Consideration was given to a program to serve the individual as to his (1) vocational needs, including (a) guidance information on farming and related occupations in the local community, with a study of such items as farm management records, types and values of farms, ability requirements of farming and related occupations, (b) technical training to develop abilities in productive farming or related occupations; (2) individual development to enlarge civic and vocational intelligence; (3) physical health to develop physical well-being and the community through recreational, social, and institutional activities.

Placement

The committee report stressed the fact that placement, whether in agriculture or a related occupation, was an integral part of a comprehensive and complete training program and suggested the following general procedure in dealing with the problem:

"(1) Make an analysis of the individual pupil and his situation as they affect placement; (2) identify pupils who need placement apart from existing situations; (3) survey and classify placement opportunities; (4) develop and increase placement opportunities; (5) provide for a progressive selective placement program; (6) develop systematic instruction so that it makes for continuous, adjusted, and progressive placement; (7) make studies of placement (8) develop a feeling of responsibility on the part of parents for assistance with satisfactory placement."

There seemed to be a general opinion in the conference that there has been a lack of emphasis given to placement in both farming and related occupations in a program designed to serve the needs of out-of-school farm youth.

Other problems discussed in the conference and which will be covered in detail in the conference report are, the relation of the F. F. A. to the program, financing the program, suggested program to be carried out in the states to make the program effective.

Professional News Notes

PROFESSOR H. G. Parkinson, head of the Department of Agricultural Education at The Pennsylvania State College, is spending this year as acting dean of the Puerto Rico College of Agriculture. Dr. W. A. Broyles is acting head of the department at Pennsylvania while Professor Parkinson is away.

Charles R. Allen, educational consultant for vocational education, U. S. Office of Education, and a pioneer in vocational education, is retiring from government service. Always an enthusiastic sailor, Dr. Allen is a figure these days along the Potomic waterfront in Washington, where he has taken up his abode in his mahogany constructed cabin cruiser in which he plans to sail for Florida with the return of cold weather.

Occupations of Ex-Teachers of Vocational Agriculture

WHAT becomes of teachers of vocational agriculture when they are no longer counted in the profession? A recent survey made by Doctor C. S. Anderson of The Pennsylvania State College reveals the present occupations of 108 former teachers of the subject.

Thirty-three per cent are now engaged in teaching subjects other than vocational agriculture, particularly science. Some are in school supervisory work. Others have responsible administrative stations in the public schools. Most of this number who are still reported as teaching are in positions of promotion.

Twenty-one per cent are farming or are in occupations allied to farming. It is to be expected that farming will draw heavily on the agriculture teachers. They are largely farm-reared. Their college course fits them admirably to enter into farming.

Sixteen per cent are in agricultural extension work. Although they have left the teaching of secondary school agriculture they are still teachers, in general pursuing the profession for which they were trained.

Eleven per cent are engaged in some type of merchandizing. Men in this group are farthest removed from their vocational preparation, although a few are selling in fields closely related to farming.

Five per cent are engaged in research work. Two per cent are studying, thus continuing their professional preparation. Seven per cent are distributed among a number of miscellaneous occupations.

Only 5 per cent report that they are unemployed. Unemployment has been less disturbing among teachers of vocational agriculture than in the case of most other groups of teachers. This, Doctor Anderson says, is due principally to the fact that prior to the depression period there were never quite enough young men trained from year to year to meet the growing demand for qualified teachers of vocational agriculture.

The Future

AS I visualize the future, I see the number of teachers increase as the number of agriculturalists, skilled laborers and industrial workers decrease. . . . Christian teaching is an industry that can never be overdone as it is turning out a product of which there can never be a surplus. *Even today the safest and most profitable investment is in education.*

Whatever social or political systems may be tried in the future, children will always be the greatest assests. Stocks,

(Continued on page 80)

Leisure Reading for Vocational Boys

A Select List

R. W. GREGORY, Purdue University, Indiana, and
CARRIE E. SCOTT, Indianapolis Public Library

The Agricultural Education magazine feels fortunate indeed in having the opportunity of presenting this list of leisure-time reading books. Many departments of vocational agriculture are building up libraries of such books. Often this is done by the Future Farmer Chapter. It is a progressive idea.—Editor

THE WORLD OF SCIENCE

Note: Address and full name of each publishing company are at the end of the book list.

Beebe, William — *Exploring with Beebe.* Putnam, $2.00. The naturalist-explorer has selected from several of his books chapters that tell of many exciting and humorous experiences with birds, reptiles, and sea creatures.

DeKruif, Paul Henry — *Microbe Hunters.* Blue Ribbon Books, $1.00. Brief biographies of pioneer bacteriologists, their struggles and achievements. A. L. A.

Fast, Alger J., Kaiser, B. S., Kelley, D. G.—*Scout Naturalists in the Rocky Mountains.* Harcourt, $1.75. Describes the work and experiences of a group of Eagle Scouts who formed the second expedition to do summer work for the government in the National Parks. Bookshelf.

Slosson, Edwin Emery — *Creative Chemistry.* Garden City, $1.00. Relates the achievements of chemistry in industry, agriculture, and warfare. Interestingly written, for general reading.

THE WORLD IN ACTION

Cottler, Joseph C., and Brecht, Harold—*Career Ahead.* Little, $2.50. This book presents a picture of the world at work by giving a brief but understanding account of over sixty occupations.

Hibben, Thomas — *The Carpenter's Tool Chest.* Lippincott, $2.00. The first book written for boys and girls to describe tools and also to trace their evolution through the ages and to show their relation to the civilization that has been developed through the use of them.

Muller, Charles G.—*How They Carried the Goods.* Dodd, Mead and Co., $3.00. The story of transportation from the creaking sleds of Pharaoh to the swift airplanes of today.

LIVES OF GREAT MEN

Eaton, Jeanette—*Young Lafayette.* Houghton, $2.50. A dramatic story of the life of that impulsive young Frenchman; who, true to his ideals of liberty joined in the struggle of American independence and played a gallant part.

Finger, Charles Joseph—*David Livingstone, Explorer and Prophet.* (Windmill Books) Doubleday, $1.00. A well-written, fascinating account of the life and adventures of one of the world's greatest explorers.

Haworth, Paul Leland — *George Washington, Country Gentleman.* Bobbs, $3.00. Written with simplicity and charm, it gives an interesting account of home life in Mount Vernon, and pictures Washington as farmer, employer, and business man. A. L. A.

James Bessie R. and Marquis—*Six Feet Six; the Heroic Story of Sam Houston.* Bobbs, $2.50. Adapted from the biography *The Raven,* written by Marquis James.

Lindbergh, Charles Augustus—*We.* Grosset, $.75. The famous aviator's own account of his first transatlantic flight, together with the story of his life and his views on the future of aviation.

Luckner, Felix, graf von—Count *Luckner, The Sea Devil,* edited by Lowell Thomas. Garden City, $1.00. His experiences as a German naval officer in the World War, make a thrilling story.

Lisitsky, Gene—*Thomas Jefferson.* Viking, $2.50. A well-written life of one of America's most versatile statesmen, giving an excellent picture of colonial life, seen from many angles.

O'Sullivan, Maurice— *Twenty Years A-Growing.* Viking, $2.50. Life in an isolated Irish community on the Blasket Islands takes on idyllic tone in this islander's story of his boyhood. A. L. A.

Pupin, Michael I.—*From Immigrant to Inventor* (Popular Edition). Scribner, $2.00. The inventor of the Pupin coil and one of America's important contributors to the science of electricity tells with refreshing earnestness and frankness of coming to America as a Serbian immigrant, of his early struggles and friendships, his studies here and abroad, and his work as an inventor. A. L. A. (A special school edition is being printed.)

Sandburg, Carl—*Abe Lincoln Grows Up.* Harcourt, $2.50. Reprinted from *Abraham Lincoln, his Prairie Years.* The chapters included tell of his boyhood and young manhood.

Sandburg, Carl—*Abraham Lincoln,* Blue Ribbon Books, $1.00.

Thomas, Lowell Jackson—*Hero of Vincennes; the Story of George Rogers Clark.* Houghton, $2.50. The adventures and achievements of the young colonial surveyor and explorer who became a general in the American army are related in a particularly graphic manner. A. L. A.

White, Stewart Edward — *Daniel Boone, Wilderness Scout.* Garden City, $1.00. An inspiring account of Boone's exploits as explorer and frontiersman. A. L. A.

THE TRAVELER'S WORLD

Boyd, Joyce—*My Farm in the Lion Country.* Stokes, $3.00. Life on this dairy farm in the Tanganyika country was constantly filled with dangerous, exciting adventure.

Byrd, Richard Evelyn — *Skyward.* Blue Ribbon Books, $1.00. Man's mastery of the air as shown by the brilliant flights of America's leading air explorer. Subtitle.

Ellsberg, Edward—*On the Bottom.* Dodd, $3.00. This thrilling account of the raising of a submarine S-51 shows new developments in the old adventure of deep-sea diving. Boys will like this book. *On the Bottom,* Blue Ribbon Books, $1.00.

Franck, Harry A. — *A Vagabond Journey Around the World.* Garden City, $1.00. A picturesque and extremely readable account of a young college graduate's experiences in working his way, with money only for photographic materials, across the Atlantic and through Europe, India, and Japan. A. L. A.

Parkman, Frances — *The Oregon Trail.* Farrar and Rinehart, $1.00. The finest story, of the west before the days of '49. A thrilling tale.

Peck, Anne Merriman—*Young Germany.* McBride, $2.50. Gives the aims and activities of the youth movement in Germany.

Pinchot, Gifford Bryce—*Giff and Stiff in the South Seas.* Winston, $2.00. An enthusiastic account of a boy's trip to the South Seas written by himself.

Siple, Paul—*A Boy Scout with Byrd.* Putnam, $1.75. The author of this book was the representative of the Boy Scouts of America chosen to go as a member of Byrd's antartic expedition. He has given a well-presented account of the trip.

Walden, Arthur Treadwell—*Dog-Puncher on the Yukon.* (Riverside Library) Houghton, $1.00. The author hauled freight with dog teams over the dangerous passes and unknown trails of the Yukon from 1896 to 1904. He here tells the story of the gold rush vividly and with fresh interest. A. L. A.

THE WORLD OF ANIMAL LIFE

Cooper, Courtney Ryley—*Lions'n' Tigers'n'Everything.* Little, $2.00. Tells in a very interesting way how circus animals are caught, trained, and cared for.

Eipper, Paul—*In My Zoo.* Viking, $2.50. From his wide acquaintance with zoo animals the author has written a book of short sketches on the way of life of birds and beasts in captivity. A. L. A.

James, Will—*Smoky, the Cowhorse.* (Popular Edition) Scribner, $1.00. One of the best horse stories ever written. Awarded the Newbery medal, 1927.

Ollivant, Alfred—*Bob, Son of Battle.* Garden City, $1.00. One of the best dog stories ever written.

Salten, Felix—*Bambi.* Grosset, $.75. A beautifully written life story of a wild deer from fawn to stag.

THE WORLD IN STORY

Carroll, Gladys Hasty—*As the Earth Turns.* Macmillan, $2.50. A wholesome story of family life on a Maine farm, beginning in winter and following through each season in turn.

Case, John F.—*Moon Valley.* Lippincott, $1.50. A young college graduate comes back home to teach agriculture, with some surprising results.

Chambers, Robert W.—*Cardigan.* Harper, $2.25. Romance and adventure during the troublous times of the French and Indian War period in the American colonies.

Chapman, Paul W.—*The Green Hand.* Lippincott, $1.50. The story of a Future Farmer chapter in action. They got results for the group as well as for the individual.

Davis, William Stearns—*A Victor of Salamis.* Macmillan, $2.00. A thrilling story of the invasion of Greece by the Persians led by Xerxes.

Ferber, Edna—*Cimarron.* Grosset, $.75. A stirring tale of the land rush into Oklahoma in 1889. A. L. A.

Ferber, Edna—*So Big.* Grosset, $1.00. Story of how a woman managed a truck farm near Chicago, made a success of it, and was able to give her son greater advantages than she had enjoyed.

Grey, Katharine—*Rolling Wheels.* Little, $2.00. This account of the experiences of the Lambert family and other pioneers who made an overland journey from Indiana to California in 1843-46, makes an inspiring story of courageous achievement. This story is continued in the sequel, *Hills of Gold.*

Grosvenor, Mrs. Abbie (Johnston)—*Winged Moccasins; a tale of adventurous mound-builders.* Appleton, $2.00. Reconstructs in a graphic manner that remarkable civilization of those prehistoric people who lived in America hundreds of years ago.

Hewes, Mrs. Agnes Danforth—*Glory of the Seas.* Knopf. $2.00. A stirring story of the days of Clipper-ships, that shows the great rivalry between the boat builders and owners of New York and those of Boston. A. L. A.

Hough, Emerson—*The Covered Wagon.* Grosset, $1.00. A story of the westward movement, following a wagon train on its journey to Oregon in '48. A. L. A.

Lane, Mrs. Rose (Wilder)—*Let the Hurricane Roar.* Longmans, $1.50. A short and graphic story of early days in Dakota in which two young people, Caroline and Charles, living in a dug-out, meet the stern realities of life. A. L. A.

Lewis, Elizabeth Foreman—*Young Fu of the Upper Yangtze.* Winston, $2.50. Fine story of boy life in Modern China. Was awarded the Newbery medal in 1933.

Lovelace, Mrs. Maud (Hart)—*Early Candlelight.* John Day, $2.50. Fort Snelling and the village of Pig's Eye, which later became St. Paul, are the scenes of this colorful romance of Minnesota frontier life. A. L. A.

Meader, Stephen W.—*Red Horse Hill.* Harcourt, $2.50. The background of New Hampshire country life is particularly well drawn, and the characters and events evolve naturally. A. L. A.

Meigs ,Cornelia—*Swift Rivers.* Little, $2.00. Gives an account of the adventures of Christian Dahlberg, who in 1835, was engaged in logging and rafting logs hundreds of miles down the Mississippi, and presents a thrilling picture of the hazardous life of river pilots and raft hands.

Mitchell, S. Wier—*Hugh Wynne, free Quaker.* Appleton-Century, $2.00. A Quaker's boy's experiences during the American Revolution as a spy and as a member of Lafayette's and Washington's staffs.

Nicholson, Meredith—*The Cavalier of Tennessee.* Burt, $.75. A romance based on the life of Andrew Jackson.

Nordhoff, Charles B., and Hall, James Norman—*Falcons of France.* Little, $2.50. Story of an American boy's adventures in the Lafayette Flying Corps during the World War.

Nordhoff, Charles—*The Pearl Lagoon.* Little, $2.00. An excellent story of a young boy's journey to the South Seas and his thrilling search for pearls. A. L. A.

Quick, Herbert—*Vandemark's Folly.* Burt, $.75. A story of pioneer life in Iowa.

Schmidt, Sara Lindsay—*New Land, a novel for boys and girls.* McBride, $2.00. A story of the struggle and victory of vocational agriculture.

Singmaster, Elsie—*Swords of Steel; the story of a Gettysburg boy.* Houghton, $2.00. A well-written story of the Civil War.

Stevenson, Robert Louis—*Treasure Island.* Scribner, $1.50. Exciting plot, mystery, and search for treasure are here combined with real literary merit. A. L. A. (A special school edition is available for 60 cents.)

Swift, Hildegarde—*The Railroad to Freedom, a story of the Civil War.* Harcourt, $2.50. A well-written, dramatic story of the underground railroad, founded upon fact.

Westcott, Edward Noyes—*David Harum.* Grosset, $1.00. One of the best humorous stories concerned with horse trading.

White, Edward Lucas—*Andivius Hedulio.* Dutton, $2.50. The adventures of a Roman nobleman in the days of the empire. Full of action and detailed description of the life of the period. A. L. A.

White, Stewart Edward — *Blazed Trail.* Grosset, $1.00. Life in a Michigan logging camp is described realistically. A. L. A.

Wister, Owen—*The Virginian, a horseman of the plains.* Grosset, $1.00. A capital study of the best type of western cowboy. A. L. A.

Young, Stark—*So Red the Rose.* Scribners, $2.50. A new Civil War story which is receiving the endorsements of the critics as one of the best books of 1934.

PUBLISHING COMPANY ADDRESSES

1. Blue Ribbon Books
   386 Fourth Avenue
   New York City.
2. Bobbs-Merrill Company
   Indianapolis, Indiana
3. A. L. Burt Company, Inc.
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   New York City, New York
4. D. Appleton- Century Company
   New York City, New York
5. John Day, Inc.
   386 Fourth Avenue
   New York City, New York
6. Doubleday, Doran and Company
   Garden City, New York
7. Dodd, Mead and Company
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8. E. P. Dutton and Company, Inc.
   286-302 Fourth Avenue
   New York City, New York
9. Farrar and Rinehart, Publishers
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   New York City, New York
10. Garden City Publishing Company
    Garden City, New York
11. Grosset and Dunlap
    1140 Broadway
    New York City, New York
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    49 East 33rd Street
    New York City, New York
14. Houghton, Mifflin Company
    Boston, Massachusetts
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    New York City, New York
16. J. B. Lippincott Company
    Philadelphia, Pennsylvania
17. Little, Brown and Company
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18. Longmans, Green and Company
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19. The Macmillan Company
    New York City, New York
20. The McBride Publishing Company
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    New York City, New York
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23. Sears Publishing Company, Inc.
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    New York City, New York
24. Frederick A. Stokes Company
    443-449 Fourth Avenue
    New York City, New York
25. Viking Press, Inc.
    18 East 48th Street
    New York City, New York
26. John C. Winston Company
    1006 Arch Street
    Philadelphia, Pennsylvania

Federal Appropriations for Vocational Education

C. M. ARTHUR

THE George-Ellzey act which was signed by the President May 21, 1934 authorizes congress to appropriate for vocational education each year for three years $3,084,603—$1,031,020 for vocational education in agriculture, $1,032,191 for vocational education in trade and industry, and $1,021,392 for vocational education in home economics. The allotments for agriculture are based upon the ratio of the farm population of the state or territory to the total farm population in the United Sates and its territories; for trade and industrial education upon the ratio of the non-farm population to the total non-farm population; and for home economics on the ratio of the rural population to the total rural population.

This act takes the place of the George-Reed act, under the provisions of which no funds are available after June 30, 1934.

The essential differences between the George-Reed and the George-Ellzey acts are as follows: The George-Ellzey act authorizes appropriations for voca-

tional education in trade and industry as well as in agriculture and home economics, whereas no appropriation for trade and industry was available under the George-Reed act; provides for a minimum appropriation of $5,000 to each state and territory for agriculture, for trade and industry, and for home economics, no minimum being designated under the George-Reed act; and liberalizes the provision with respect to part-time classes in trade and industry by permitting such classes for periods of less than 144 hours.

The George-Ellzey act is practically a continuation and not an expansion of the George-Reed act, differing from the latter principally in that it authorizes equal appropriations for each field—agriculture, trade and industry, and home economics. In passing it, congress has not adopted any new policy but is simply following the policies in operation under the George-Reed act.

The funds provided for vocational education under the George-Ellzey act are in addition to the appropriations under the Smith-Hughes Act—$3,027,000 for vocational education in agriculture, $3,050,000 for vocational education in trade and industry and home economics, and $1,090,000 for teacher training in vocational education, or a total of $7,167,000 for each year. Under other acts, annual appropriations are authorized for vocational education—$105.000 for Puerto Rico and $30,000 for Hawaii.

(Mr. Arthur is vocational education editor with the office of education, U. S. Department of Interior, with headquarters at Washington, D. C.)—From Agricultural Leaders' Digest.

Federal Extension Appropriations

C. W. WARBURTON

FEDERAL appropriations to the states for cooperative extension work for the fiscal year beginning July 1, 1934, are in practically the same amounts as were available during the past year. The Executive Order of June 10, 1933, provided for a reduction of 25 per cent in these grants to the states, but the effectiveness of this order was later postponed until 60 days after the convening of congress in January, 1934. Late in February, a new Executive Order was issued revoking the provisions of the previous order requiring a reduction in grants to the states for land grant colleges, agricultural experiment stations, cooperative extension work, and vocational education.

With the revocation of this portion of the Executive Order of June 10, the permanent Smith-Lever appropriation was continued in the usual amount and the Agricultural Appropriation Act, later passed by congress, carried the Supplemental Smith-Lever, the Capper-Ketcham, Additional Cooperative, and Alaska extension appropriations in the same amounts as for the fiscal year ending June 30, 1934. The total of these appropriations is $8,748,096, of which $12,000 is for Alaska and $70,000 for Puerto Rico. The 48 states and Hawaii share in the remainder according to the provisions of the several acts.

In addition to the foregoing amounts which are direct grants to the states, the Division of Cooperative Extension Work has an appropriation designated as Farmers' Cooperative Demonstration Work, which for the next fiscal year is $684,648. This appropriation provides for the operation of the Divisions of Cooperative Extension Work and Motion Pictures, the remaining balance being made available to the states for cooperative extension work. Allotments to the states from this fund this year will be only about $200,000, this appropriation having been greatly reduced during the past two years. As compared with the $684,548 available for the fiscal year 1935, the amount available for the fiscal year 1933 was slightly less than $1,500,000, and that for the fiscal year 1934 was $1,065,000. The appropriation for Cooperative Farm Forestry for 1935 is approximately the same as for 1934.

(Dr. Warburton is director of extension work, U. S. Department of Agriculture, with headquarters at Washington, D. C.)—From Agricultural Leaders' Digest.

Seldom does a girl's picture appear in this magazine. Here is Eleanor Reeves, daughter of R. E. Reeves, teacher of vocational agriculture at Cape May, New Jersey, and the 8-foot shark she hooked in Delaware Bay at Reed's Beach late in summer. She caught it on the the small line she is holding in her hand. Look out for the girl who can land a shark.

Educational Excursions

HAROLD H. BEANE, Teacher of Vocational Agriculture, Guthrie Center, Iowa

ALL-DAY excursions by vocational agricultural students at Guthrie Center, Iowa, have proven interesting and educational. The results have been so satisfactory that the instructor has adopted the plan of taking two trips a year as a part of his program.

Farm boys have commended the excursions. Their parents have approved the activity. School authorities have sanctioned the practice. And, since no serious objections have been offered, the instructor feels assured that the many benefits of a well-planned, wisely conducted trip far offset the personal effort and responsibility connected with the excursion. Experience has proven that a group of fifty or sixty is as easily managed as a small group.

The method of conducting excursions has been developed and used during the past five years. A definite plan is necessary, to protect the instructor from undue criticism and to insure satisfaction on the part of the students and parents.

Suggestions as to the trip are made to the boys several months before the date of going. This is to stimulate interest, and will give the instructor a chance to receive unfavorable reaction on the proposed trip. So far, no proposed trip has met with adverse criticism.

Three weeks prior to taking the trip, the concerns to be visited on the excursions are asked for permission for such a group to visit their places of business. Suggestions as to the time of the day and the time necessary are requested, if permission is granted. The Chamber of Commerce, service clubs, and other business organizations have readily offered their services in planning the itinerary of the day.

About a week before going, a letter is sent to each vocational boy. In this letter, facts about the trip are given. The boy is advised to let his parents read the letter and give their permission to his going. This assures the instructor of the parent's approval of the trip and also, waives responsibility for the instructor, bus driver, and school. These letters are collected on the morning of the trip when transportation assessments are paid.

Transportation has been cared for by using cars and buses. Buses driven by adults have proven far superior to cars. Transporting charges are borne by the students and are paid prior to leaving. The charge made last year for a one-hundred-mile trip was 30 cents.

Plans for the day should include several notations. Time of starting, time-allotment to each place to be visited, eating arrangements, special privileges, time of leaving for home, and the approximate time of arriving in Guthrie Center are necessary considerations. Of course, this time schedule must be flexible, as multiple incidents may cause an alteration of the plan.

Visitations of most interest and practicability, as we have found, are industrial excursions to Des Moines and Omaha and to the State Fair. Industrial visits may include trips thru packing plants, stockyards, paper-printing companies, state historical buildings, broadcasting stations, memorial institutions, and county jails.

All-day excursions offer to the student an opportunity to visit places of interest and educational value. They give him a chance to appreciate the value of cooperative action in organizing for such trips. Excursions give the instructor an opportunity to offer the boys something of an unusual nature by actually seeing business in action. They give the instructor a chance to impress the parents with the view that he is interested in their boy and wants to give him opportunities not otherwise provided for him. All-day trips demonstrate to the parents the fact that vocational work is not limited to the classroom but is striving to make use of all educational facilities within its radius of study. All-day excusions may be made practical, interesting, educational, inexpensive, and appreciative and should be encouraged.

Farmers' Forums

W. G. WADE, Vocational Agriculture Teacher, Savannah, Missouri

THE need for farmers' forums in my community in northwestern Missouri became evident as an outgrowth of a farm survey made some years ago. As I visited farmers on this survey, I discovered that they were asking me as many or more questions than I asked them, and in many cases the questions indicated that their problems were the same.

I concluded that these men might be interested in coming together to discuss these problems informally. With the cooperation of Superintendent R. J. Westfall and my board of education, I set to work on plans for a series of meetings.

The first group of these forums was held in 1932. Based partly upon my own interest and ability and partly upon the apparent interests of the farmers, our first series was on farm shop. Much of this was in the form of doing the work in the school shop, but much discussion was, of course, involved.

The boys of the regular vocational classes were used in acquainting farmers with the proposed meetings. Each boy selected a farmer in his community who would be interested in shop work and invited him—almost insistently—to attend. The first evening proved so interesting that each one of these men returned the next time with one or more neighbors. The number increased so that the capacity of the shop was overtaxed, and it was necessary to move to larger quarters. The total attendance this first year was 116.

THE second year the meetings were held in the new school building, and the general theme was farm mechanics—something of an expansion of the first year's topic. With more room it was now possible to expand somewhat, so articles were run in the local newspapers, describing the meetings and inviting all who were interested to attend. For the 10 meetings in 1933, the total attendance was 594 farmers and their wives.

This year farm management was selected as the "theme song" for the forums. Twelve meetings were held, starting in January, 986 farmers and their wives taking advantage of this opportunity to talk over their difficulties under the leadership of someone who either had or could secure helpful information. There seemed to be three general types taking part in these forums. Some came to learn, with the definite idea of putting the new ideas into practice; some came out of curiosity or because they had nothing else to do; some to ask questions the answers to which they already knew, thus displaying their erudition before their neighbors.

On the basis of general questions asked informally and my knowledge of the local situation, I prepared a list of 247 subjects in which I knew the group to be interested. At the close of each meeting I would call for the nomination of about ten subjects from which to select topics for the next discussion. A vote was then taken to determine which should be selected, the majority deciding. Two topics were selected each time, the runners-up usually winning a place on the succeeding program. Subjects not on the list could be nominated by any member of the group, and this was sometimes done.

Meetings were held each Monday night from 7:30 to 11:30. Four hours seems a long stretch, and we had originally planned for only 1 hour, or at most 2, each evening. The farmers, however, indicated a desire to put in a full evening once they were there, saying that they preferred to stay longer each time rather than make the trip back and forth oftener. At each meeting then, two topics were before the group for discussion. Even though the official discussion closed at 11:30, I had difficulty in getting away before 12, due to the tendency for small groups to stand around for further discussion.

WITH the lesson for the next meeting chosen each Monday night, thought-provoking questions were written up and sent to the local paper on Wednesday for publication on Friday. Farmers could then know definitely what was to be discussed and could come or not, depending upon their interest. At the same time we published a review or summary of the last lesson, together with the names of the persons present. This seemed to stimulate attendance.

I found it necessary to make very careful preparation for each meeting. I had all the information possible on each question and had references on hand as a means of supporting a disputed point. I welcomed difference of opinion, but was careful not to make statements which I could not prove. Occasionally some unforeseen question arose upon which more information was needed. This was referred to one or more of the boys in my all-day class, some of whom were always present. They reported their findings to the group.

Much illustrative material was used, including pictures, diagrams, and drawings on the blackboard. Motion pictures were used to a considerable extent, both for education and relaxation. So far as possible, the discussions grew out of current or seasonal problems.

In connection with these forums we instituted a purchase-and-sales project. If a farmer had something to sell, this was listed on the board at the first of the meeting and in most cases was disposed of before the group went home. Growing out of this, came a demand for cooperative buying, handled by committees selected by the farmers. In this manner 8,000 pounds of certified Early Ohio potato seed, 500 bushels of certified Columbian oats and 100 bushels of certified Reid's Yellow Dent corn were purchased at considerable saving to the buyers.

Keeping in mind the value of variety and the unique in maintaining interest, I tried several schemes. When butchering was up for discussion, several different formulas for curing pork were presented. I brought samples of meat cured in different ways, fried it on a stove at the front of the room, and passed around the small pieces on tooth picks. The last meeting we always had something special in the way of motion pictures, music, plays by high school students, and refreshments. In most cases mimeographed material bearing on the discussion was passed out to be taken home by the farmers and read at their leisure.

At the last meeting this year, the demand for another forum next year was unanimous. A committee of five was selected to help prepare the program. At this time also figures were given showing that average attendance the first year was 10 per meeting, the second year 59, and the third year 82. If this high average can be maintained, we shall be pleased.

Extra-Curricular Activities Desirable in Teacher Preparation

PARTICIPATION in college extra-curricular activities, particularly athletics, has no appreciable influence on a student's later success as a teacher of vocational agriculture, unless he is also called upon to teach athletics and agriculture, according to a survey made by the Rural Education Department of The Pennsylvania State College. The records of 300 graduates, most of whom are teaching or have taught, were studied.

As college students these men engaged in a wide variety of athletics. Many were letter men. The ten leading sports in order of frequency were wrestling, track, baseball, backetball, football, soccer, boxing, tennis, cross country, and lacrosse.

The intellectual extra-curricular activities bore a closer relationship to teacher success than did athletics. Illustrations of these were in music, dramatics, school publications, forensic, and civic activities. One can readily see that training in these activities carries over in a large measure to the work of the classroom.

Commonly accepted measures of teacher success, such as length of teaching experience, teacher transiency, and salaries and salary increments, were recognized in the study. The general conclusion drawn is that participation in extra-curricular activities is desirable although not essential in the preparation of successful teachers of vocational agriculture.

I THINK that adult education, if it is to be serious, must not aim at general intelligence, but at knowledge which is going to be of practical utility, in work, in health, in the care of young children, in forming political opinion, or in any other way in which the adult is himself conscious of possessing insufficient information. At present, scholastic education too often generates a distaste for knowledge.—Bertrand Russell, Journal of Adult Education, April, 1934.

Methods

Some Suggestions on a Filing System for the Agriculture Department

J. E. BORDER, State Supervisor of Agricultural Education, Montana

EVERY agriculture instructor develops his own system of filing records and material for teaching and community work. However, a few general suggestions apply to all departments, and these should be of help to new instructors who need to re-organize the files they find on hand or set up new ones.

Filing Equipment

Filing equipment will be added from time to time, but, to begin with, the department would need the following—

2 to 4-drawer letter-size filing cabinet (preferably metal, although wooden ones could be made in the shop)
2 to 4 sets of alphabetical guides; 1 or 2 sets label-holder guides
1 box (100) letter-size folders
Bookcase—Bulletin cabinet

Divisions

Definite divisions save time in locating material. These might be set up somewhat on the plan of the brief outline given below—

I. Correspondence
  A. General (A to Z)
  B. Individual letter folders (filed alphabetically in same file), one for County Agent, etc.
II. School Records and Reports to State Office (filed by subjects)
  A. School records
    (1) School inventories
    (2) Requisitions of supplies
    (3) Expenditures (postage, small supplies, mileage)
    (4) Student records
      (a) Prospective students (8th grade graduates)
      (b) Evening school students
      (c) All-day students
      (d) Graduates of agriculture department
  B. State reports (duplicate copies of all reports sent to state office) (Individual folders for annual report, project summary, etc.)
III. Teaching Material
  A. Year's teaching plan
  B. Course outlines by units
  C. Available source material and references
  D. Supervised practice program
    (1) Farm survey
    (2) Project material (good project plans and individual summaries to use in class)
    (3) Record of each boy's long-time supervised practice program
  E. Community (year's program, long-time; services rendered, etc.)
IV. Future Farmers of America
  A. Correspondence
  B. Chapter organization and activities
    (1) Constitution and by-laws
    (2) Publicity (radio and other programs; exhibits, news, etc.)
    (3) Treasurer's and secretary's reports
    (4) Greenhand and Future Farmer records
    (5) State and American Farmers
V. Filing Cabinet for Bulletins—Bookcase (Agricultural bulletins and publications grouped by "subjects," e. g., under "Potatoes" may be included varieties, cultivation, marketing, etc.) Books may be grouped by subjects also.

During summer months, or at most convenient time, the last year's correspondence and other material may be gone over. Unimportant and out-of-date material should be thrown out, and the last year's correspondence that is kept could be put at the back of the drawer or transferred to another filing drawer. It saves time to keep in the current files, as nearly as possible, only material being used. Old magazines and newspapers should not be allowed to accumulate on racks. Worthwhile articles can be clipped from them and mounted in folders for future use. All labels on folders should be typed or printed in dark ink.

It is important that the students understand the system of filing bulletins, so that they will not waste time in finding them. Then, too, they will be able to help in filing these bulletins and in keeping them in proper place.

Measuring the Pupil's Progress

D. W. PARSONS, University of West Virginia

THE achievement of agriculture pupils should be measured in the light of the aims and purposes which the teaching is intended to realize. Mere possession of a knowledge of the facts and principles of farming is of less significance than is the ability to use this knowledge in actual farming situations. The teacher of vocational agriculture needs to avail himself of all his several opportunities for the checking of his boys' proficiency in learning to farm.

Check Up on Actual Practices

The job plans in the boy's record book, the field trip for practice, the supplementary learning jobs in the boy's practice program, and the carrying out of the activities in his several enterprises, all furnish real vocational situations, for checking and determining the progress of the boy in learning to farm. The teacher should make specific and definite use of each and all of these in determining how the boy shall be graded in vocational agriculture. The scoring of the boy's practices in a given enterprise not only serves to measure his proficiency in farming, but also serves to guide him toward an improvement in his procedure. Likewise the teacher needs to set a specific situation for checking the degree of skill attained in field practicums, such as culling hens, pruning trees.

Base Tests on Field Work

The written tests should be as objective as possible and should be based on real situations. For example, the field trips for observation and study of farming problems should be used as a basis for specific testing of the boy's use of knowledge in an actual situation. For example:

1. Recalling the field trip to Riley's poultry house, indicate the desirable features of his laying house and describe what he needs to do in order to bring the laying house up to standard.

2. Recalling the field trip to Kum's brooder house, explain how he is:
  (1) Making provision for desirable sanitary practices.
  (2) Following superior procedure in feeding his chicks.
  (3) Providing suitable brooding facilities.

Use New-Type Tests

The several new-type tests such as completion, true and false, association, multiple choice, and enumeration may well be used to discover the accuracy of the boy's information on farming practices. If enough of these test questions are developed, a wide range of specific knowledge can be very definitely checked. While it takes considerable work to prepare good tests of this character, a teacher can gradually develop a sufficient number and save himself much work in the grading of examination papers and in guessing at the probable value of the pupil's answer. Below are given examples of each type:

1. Completion:—
  (1) Coccidiosis in chicks may be prevented by correct _____ practices.
  (2) White diarrhea in chicks can be avoided by buying _____ chicks.

2. True and false:—
  (1) Spray potatoes for blight, with lime sulfur diluted to summer strength.
  (2) For effective disease control, potatoes should be sprayed at a pressure of 200 pounds or more.
  (3) Timothy and red clover make a suitable seed mixture for seeding the permanent pasture.

3. Association:—
  (1) Connect each of the items in column A with the item or items in column B which make the most appropriate association as a means of control:

Column A	Column B
Potato leaf hopper	Lime sulfur
Cabbage maggot	Nicotine sulfate
Rhizoctonia	Bordeaux mixture
Potato scab	Calcium arsenate
Tomato leaf spot	Paris green
Mexican bean beetle	Lime
	Hot formaldehyde
San Jose scale	Corrosive sublimate

4. Multiple Choice:—
  (1) A fertilizer suitable for potatoes should have the following analysis (3-12-4; 4-8-6; 5-8-7; 5-12-10; 15-30-15).
  (2) One should plant (6, 8, 12, 15, 18, 20, 25, 30) bushels of potatoes to the acre.

5. Enumeration:—
  (1) State the effect on the potato plant of:—
    (a) Nitrogen
      a. _____
      b. _____
    (b) Phosphorous
      a. _____
      b. _____
    (c) Potash
      a. _____
      b. _____

Objective Test

In addition to these type tests, one should use tests which deal with objective material, such as:

1. Taking the five disease specimens from the desk, indicate:—
  (1) The name of the disease.
  (2) The cause of the disease.
  (3) The damage done to the host.
  (4) The control measures to use.

2. Evaluate the three hens in the coop for laying possibilities, paying particular attention to the head characteristics.

If the teacher will grade the boy on his job plans and the financial and labor records in his supervised practice record book, on his actual performance in the field practice jobs, and the shop jobs taught, and score the boy in the carrying out of the several enterprises in his practice program in addition to the classroom tests previously illustrated, a worthwhile measure of the boy's progress in learning to farm may be obtained.

The Department-Owned Textbook Plan

WHEN school starts in the fall, many teachers face the problem of how to supply sufficient material for classroom work at a low cost to the student. Many departments use a large number of bulletins for class reference material, but I think that every agriculture class should also have a textbook for general reference. We use bulletins for new material and to obtain a more thorough discussion of the topics studied, but each class has at least three or four different textbooks for general reference work. These books are owned by the department and rented to the students. Each student pays a $1.50 "book fee" at the beginning of the school year, and this permits him to use all books, bulletins, and newspapers during the year. This fee also includes notebook reinforcement rings, ink eraser, colored ink, manila folders, rope for farm mechanics, F. F. A. markers, and dues.

There have been very good results with this system. It is an easy way to collect F. F. A. dues, as all fees are paid the second week of school when most boys have some money. Also, the books are on the shelves the first day of school, and there is no waiting for books to start the regular work.

The boys' parents are well pleased with this system because it is very economical for them. If each boy were asked to buy his own books, it would cost him 4 or 5 dollars. By renting them, it costs only $1.50. We started this system three years ago; now we have plenty of books for forty boys in three classes. We own a four-wheeled trailer, compression sprayer, and have money for some new reference books this year. —E. G. Holt, Peotone—The Fan Mill, Illinois.

"Life and Living"

WE have a project that, like Topsy, just grew up. About nine years ago the school board bought additional ground for our yard. In this new part was a large Canadian thistle patch. Our agriculture class volunteered to eliminate the thistle. We decided on the clean-cultivation method of eradication. Then it was suggested that since we had to cultivate this ground we would plant something on it. We finally decided on flowers, and several packages of ten-cent annuals were planted. These flowers were such a success that in the fall the boys wanted to add perennials and bulbs. We planted a few iris and peonies. In the spring we added about a hundred gladioli and tulip bulbs. From this small beginning, by transplanting, by division of bulbs, and by the addition of better varieties we now have growing about two thousand tulips, twelve hundred fine gladioli, and several hundred iris and peonies. For the last few years when we have harvested the gladioli and tulip bulbs, we have distributed the surplus to members of our class for home planting. We have also supplied the members of our class and the community with plantings of iris and peonies. As the flower project developed, we added a rock garden with a pool, rose trellis, bird bath, and a planting of Colorado blue spruce. Another development was the building of bird houses for the yard, and today we have three colonies of martins and numbers of robins, wrens, bluebirds, flickers, wood peckers, yellow canaries, etc. As a direct result of this project, the school has become flower and bird-conscious. The boys have planted flowers and built bird houses for their homes. We also believe that they have learned a lot about, as Doctor Nolan expressed it, "life and living" that cannot be counted in dollars and cents.—John W. Green, Mazon—The Fan Mill, Illinois.

Books

COMMERCIAL Poultry Farming by T. Burr Charles and Homer O. Stewart, published by Interstate Printing Company, Danville, Illinois. A volume of 436 pages, excellent print, and profusely illustrated with well-chosen selections. Designed to aid the beginner as well as the established poultryman and may serve as a reference for the solution of management problems of both. A valuable book for practical poultrymen and should prove helpful to teachers and students in vocational agriculture. $3.20—A. P. D.

Economic Plants by Ernest Elwood Stanford, published by D. Appleton-Century Company, price $5.00. A book of 571 pages, clear print and excellent illustrations. The basis of organization is on the utility of plants to man. The student of economic plants will profit by previous courses in the elements of biology or botany and by whatever knowledge he may have of chemistry; however, this presentation should be of use to many whose preparation in plant science has been brief or lacking. The first chapter serves as a brief orientation in the plant world; while the second embodies discussion, abbreviated, of the structure of green plants. In the remaining chapters the author has presented in a clear elementary way interesting facts in regard to plant products. The book contains a good store of facts that the ordinary individual should know. This volume should prove helpful to teachers and should be of special interest to students of vocational agriculture. Due to space limitations, the plant groups dealing with edible "vegetables" and the ornamental plants are omitted. —A. P. D.

Making the Agriculture Room Attractive

E. E. MAYHEW, Roseville, Illinois

LACK of finances may prevent the addition of needed equipment in the agriculture classroom, and it may prohibit that much needed coat of paint or varnish; but it should not stop us in doing a little house cleaning occasionally. Step into your room some day as a visitor. Notice what you see first as you enter the room. Is it the old magazine rack about ready to fall down; is it the corn germinator box which is entirely out of season; or is it possibly the overloaded waste paper basket? Whatever it is, if it does not look well, move it. Put in its place the good looking magazine rack, the new bulletin board, or an appropriate picture. After you are in the room, what do you see? Do the furnishings and the pictures look as if they were placed there for harmony and attractiveness, or are they just an accumulation? Remember, it is just as important to rearrange or discard certain items of the agriculture room occasionally as it is to add others. "If one picture is good, two is better," is certainly not true. There are too many agriculture room walls loaded down with unseasonal, unpurposeful, and uninspirational pictures, etc. Three or four well chosen and properly placed pictures will add to the attractiveness of any room; more will likely detract. That old cupboard, table, or whatnot, which is really not essential, will improve the agriculture room by being moved out into the store room under the stairway. Take a lot of those handy things out of the room for a few days. Try getting along without them for a while. Now find a place for them back in the agriculture room if you can. See the room as a unit. Have a purpose for everything in the room. Rearrange things occasionally. Make the agriculture room attractive.

General education may be just as specific in its objectives as vocational education. It is general only in the sense of dealing with topics of concern to all people.

Farm Mechanics

Relation of Vocational Agriculture and Agricultural Engineering

L. M. SASMAN, State Supervisor of Agricultural Education, Wisconsin

L. M. Sasman

FARM mechanics and shop work is taught to some extent in practically every one of the 4,500 departments of vocational agriculture in the United States as well as in many of the 3,600 part-time and evening schools in vocational agriculture attended by 92,000 farmers and farm boys. Probably 4,000 of the teachers of vocational agriculture have received their training in agricultural colleges. According to a recent survey conducted by Dr. C. V. Williams of Kansas, farm shop is considered a regular part of the course in vocational agriculture in 41 states, and 20 states offer farm shop for 90 minutes daily for 5 days in the week.

These courses vary in detail, but the fundamental principles are the same in most of the states. The courses in farm mechanics are designed to give farm boys the best possible practical training in the various phases of mechanical work done on the farm. In most states the course or courses offered include farm woodwork, the care of farm tools, farm machinery adjustment and repair, harness repair, soldering, rope splicing, belt lacing, gas engines, and auto mechanics. In some states such units as rural electricity, farm water supply and drainage, and terrace leveling are included.

Dr. Williams, in the study referred to, states, "Shop or farm mechanics work should be taught parallel with and largely determined in content by the actual farm needs of the vocational boy. Such needs as become apparent to him in the course of his crop production or livestock production courses are the only basis of shop activity that can reasonably be considered a coordinate part of the vocational agricultural course."

In order to indicate specifically the content of courses in farm mechanics in departments of vocational agriculture, I have taken the following from the Illinois Suggestive Course Outline for Farm Mechanics. This course is fairly typical of the 20 states in which Dr. Williams' study showed Farm Mechanics to be given 25 per cent or more of the time in the vocational agriculture course. These 20 states are: Alabama, Arkansas, California, Colorado, Kansas, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Rhode Island, South Dakota, Tennessee, Texas, Utah, Wisconsin, and Wyoming. The Illinois Suggestive Course includes eight 90-minute periods on rope work with the teaching of finishing the end of a rope, tying knots, tying loops between the ends of a rope, making hitches, making splices, and making rope halters.

There are seven periods in harness repair to be used in making a sample harness clamp; making a supply of waxed thread; splicing a strap; attaching buckle, ring, snap; making a hame strap; repairing a trace; repairing a hame; and repairing, cleaning, and oiling a harness.

Five periods are given to belt work on the units of joining the ends of a belt with a rawhide thong, joining the ends of a belt with a wire lace, joining the ends of a belt with a rigid metal lace, and joining the ends of a belt with a jointed stamped metal lace.

Soldering is also given five 90-minute periods with such jobs as making killed acid, tinning a soldering copper, retinning soldering coppers, soldering tin, soldering copper and brass, soldering zinc, soldering iron and steel, soldering lead.

MACHINERY repair is given 30 periods, or one-sixth of the year's work. It calls for instruction in tearing down, assembling, replacing broken parts, and adjusting sulky plows cultivators, corn planters, grain drills, manure spreaders, mowers, grain binders, and sharpening discs or harrows. Other blacksmith and repair work include drilling hole in iron, threading a rod, tapping a nut, removing broken cap screw, making a gate hook and staple, making a round and flat weld, place new link in a broken log chain, and re-shaping and tempering a cold chisel.

There are 30 periods given to gas engine and auto repair during which the pupils are to be taught how to tear down a farm engine and put it together again, clean carbon from an engine, grind valves, tighten connecting rod bearings, test and adjust main bearings, rewire a gas engine, clean and adjust the carburetor, replace and fit the piston rings, test the ignition; clean, test, and adjust the spark plugs; adjust the valve tappet clearance on multiple cylinder engine; time the valves on a farm engine, time the magneto on farm and tractor engines, set the breaker points, set the governor for a certain speed in a gas engine, change the oil in the crank case of an engine, remove and replace a timer, repair a broken or weak place in a tire casing, charge a storage battery, replace brake linings, replace spindles, adjust brake, test front auto wheels for proper alignment.

Water supply, plumbing, and sewage disposal is given 15 periods in the Illinois outline and includes practice in repairing a pump, installing a kitchen pump, installing a kitchen sink and drain, installing a simple hot and cold water plumbing system for the kitchen, installing bath fixtures, installing a simple shower bath, installing a set of laundry trays, installing complete plumbing, assisting a master plumber, constructing a sanitary privy, and constructing a septic tank.

There are five periods on farm lighting. The pupils are to be taught how to clean, repair, and adjust kerosene lamps and lanterns, electrical and gas plants, install electric systems, install gasoline gas system, install blau gas system, and install acetylene.

In five 90-minute periods on heating, attention is to be given to cleaning and repairing stoves, flues, and furnaces and to repairing pipe and pipeless hot air systems, steam systems, and hot water systems.

In 10 lessons on drainage, the pupils are to be taught to make an A-shaped level, adjust the level, determine the difference in elevation between two points, lay out a drain, make a profile, establish a grade and determine the cuts, drain a pond, drain a side hill, and plan a drainage system for a 40-acre field.

To planning and drafting, the outline gives 20 periods, including instruction in reading drawings, making simple drawings, practice in lettering, plans for a simple building such as a hog house and poultry house, elevations, barn plans, making tracings, and reading blue prints.

In concrete work the outline suggests the jobs of making a concrete walk, making a one-course floor, making a two-course floor, making concrete fence posts, making concrete brick or block, making a set of steps, making a machine foundation, laying out a building foundation, making a building foundation, and making a concrete watering tank or trough.

Finally, there are 30 periods given to woodwork, including sharpening crosscut and ripsaws, plane bits, auger bits, and chisels; grinding axes, sythes, and mowing machine sickles; fitting handles on axes, hatchets, and hay forks; repairing window frames, and broken panes and frames; and constructing such things as self feeders for poultry and swine, hog troughs, eveners, hen nests, saw horses, hot beds, cold frames, seed corn testers, work benches, farm gates, poultry brooders, individual hog houses, wagon boxes and racks.

In Kansas a survey, conducted by Supervisor L. B. Pollom in 1925, showed that in 66 departments of vocational agriculture, 34 per cent of the course in farm mechanics was given to farm carpentry; 12.6 per cent to blacksmithing; 11 per cent to gas engine, auto and tractor mechanics; 10.7 per cent to farm machinery adjustment, operation, and repair; 8 per cent to fitting and repairing hand tools, 5.8 per cent to concrete construction; 5.4 per cent to harness repair; 4.8 per cent to cold ironwork; 4.7 per cent to soldering and sheet metal; 4.2 per cent to farm plumbing; 3.5 per cent to rope work; 3.2 to mechanical-advantage devices; 3.1 per cent to power transmission, and 2 per cent to babbitting.

You will note a number of differences between the Illinois outline and the Kansas content. Variations would, of course, be found in the programs of any two states or of any two departments within a state. The point that I wish to emphasize is that the teacher of vocational agriculture is expected to have a comprehensive knowledge of the whole field of agricultural engineering. But when he is getting his training, he cannot major in agricultural engineering any more than he can major in animal husbandry, horticulture, agronomy, poultry, or in any other of the departments of the college of agriculture. He is expected to teach farm mechanics so that the boys can take the training that they get in the department of vocational agriculture and put it into practice on their home farms. He is supposed to teach the problems of production and marketing in the same way.

HOW are these men trained to teach these courses in farm mechanics? In the past many of the teachers got most of their training in farm mechanics after they were on the teaching job, rather than in the teacher training institution. This condition has been greatly improved during the past five years and is continually being improved. The Kansas bulletin referred to contains the following statement regarding the inadequate training in farm mechanics of graduates of the agricultural colleges:

"A survey of the college transcripts of 66 teachers of vocational agriculture in a half dozen midwest states indicates that upon graduation each teacher had an average of less than 5 semester hours of the possible 26 in farm mechanics and farm engineering courses. Eight of the 66 graduates had no credits in such subjects, while 10 had 3 hours or less. Because of this, it has been necessary to require those who would qualify for Smith-Hughes teaching to return for further training along farm mechanics lines. In view of the number and complexity of farm mechanics and engineering problems common to modern agriculture, it would not seem unreasonable for any agricultural curriculum in colleges to require at least 18 semester hours of work in this field."

During the past few years the American Society of Agricultural Engineers has had a Committee on Relations with Vocational Agricultural Education. The two chairmen of this committee, M. A. Sharp of Iowa State College, and J. P. Schaenzer of Wisconsin, I have happened to know personally, and I know that they have done everything possible to find out what teachers and supervisors of vocational agriculture want of departments of agricultural engineering and to acquaint the departments of agricultural engineering with this information. Last year, Professor Sharp conducted a survey among 194 of the best high school teachers of vocational agriculture and found that their principal suggestions for improving the teacher-training work in agricultural engineering work were: (1) To provide more practical laboratory, shop work, and field experience and (2) to base college courses on high school farm mechanics requirements. Those suggestions come from men who have taken more or less work in agricultural engineering and have been out in the field several years putting their training to the test of experience.

In preparation for this discussion, I wrote to 16 state supervisors of vocational agriculture from coast to coast and received replies from 12 states. In response to a question as to the hours given to the various units in the farm mechanics, all of those who answered that part of the question indicated that farm woodwork, gas engines, and farm machinery were usually given the largest part of the time of the course, altho there was considerable stress in most cases to the various other units I have mentioned.

THERE seems to be no relation in the states from which I heard, between the courses offered in the high school departments and the training offered in the teacher-training institutions. The credits in agricultural engineering required of the man preparing to teach vocational agriculture vary all the way from 0 to 17, and the states that have the least agricultural engineering required in the teacher-training departments are among those who are doing the most teaching of farm mechanics.

The second thing asked of these state supervisors of vocational agriculture was: Please indicate any specific suggestions you may have for improving teacher-training in agriculture. One state reports: We sadly lack properly trained people in farm mechanics. Teacher-training courses should include work in gas engines, farm machinery, and surveying for drainage and irrigation. Another state supervisor reports: For more than ten years we have urgently requested that our trainees be given more specific training in agricultural engineering and a greater amount of agricultural engineering than our institution provides for them. From one state comes the report that "Our training is done on the job during a cadet year. We send highly selected college graduates out to the local schools where they are trained through participation and teaching in the various farm shop jobs."

One supervisor in the midwest stated: "It seems that our teacher-training set-up is quite ideal. Nevertheless the teachers as a group do not seem to be successful with their shop classes. Some of them say it is because they did not participate enough in farm skills while in school."

From another state comes this suggestion: I believe the agricultural engineering staff in immediate charge of teacher training should first visit a number of vocational agriculture departments to acquaint themselves with the nature of the mechanical work the vocational agriculture teacher is called on to teach. They should acquaint themselves with the housing, tools, and other facilities for such teaching and learn from teachers first hand their limitations and specific needs in training.

Another supervisor reports: The largest single weakness in teaching farm mechanics for prospective agricultural instructors is in the field of insufficient time and effort devoted to operative skills. And another supervisor said, "Training given in an expanded general course organized as it is to be taught in high school." Still another said, "Give a cross-section course in about 9-12 hours covering all work necessary for teachers of agriculture, and leave the remaining courses for those specializing in agricultural engineering."

TWO states in the middlewest, Michigan and Minnesota, do not to any great extent offer farm mechanics courses taught by the agriculture teacher. In most of the Minnesota departments and in Michigan there is a general shop course in the ninth grade taught by the industrial arts teacher. Minnesota offers some farm shop work during the regular agriculture time, once or twice a week, and relates such work to the needs of the boys' work in livestock and crop enterprises. Michigan offers farm machinery work in the twelfth grade. These supervisors say, "Many of our agriculture teachers are not good shop men," and "Many of our agriculture teachers are not in the least mechanically minded."

These reports show that there is considerable divergence among the states in the amount of farm shop and mechanics offered, in the training of the agriculture teacher, and in the needs for improvement either in teacher training or in other phases of the agricultural engineering program, but there are several points upon which the reports seem to be in entire agreement. The agriculture teacher needs more specific training in farm shop and mechanics, to be acquired preferably through a general shop course in agricultural engineering. This course should be built upon the known needs of the agriculture teacher who will be teaching farm boys the mechanical skills a farmer must possess.

In Wisconsin, we have had very helpful assistance during the past several years through the specialist in rural electricity. He has helped very decidedly in the organization of short unit courses especially designed for use with part-time and evening classes, but also very helpful for high school classes. If it were possible to put on similar specialists in farm machinery, that would be, I believe, one of the most helpful developments that could be made. Developments of general courses in agri-

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Evening Schools

Agricultural Evening Schools in the Western States

ELVIS W. McCOY, Idaho

[This article is a research article. Contributions to this series should be sent to the Research Editors: Mr. Wiseman for Pacific and North Central Regions; Mr. Magill for the Southern and North Atlantic Regions.]

Elvis W. McCoy

IN 1933 the writer completed a study of 162 agricultural evening schools in eight of the eleven Western states, in an attempt to bring together some of the important facts bearing on evening schools. The study included organization, place of meeting, types of enterprises taught, enrolment, number of meetings, methods of teaching, number of teachers, and supervised practice.

In making this study, the data were taken from actual reports from teachers, and descriptive reports of state supervisors.

Individual evening school teachers' reports were received from Oregon, Montana, Idaho, Utah, California, and Colorado. Reports were not secured from Washington, but the desired data were secured. Other data were taken from reports of state supervisors made to the Federal Board for Vocational Education. Data were secured from such reports from Montana, Oregon, California, Colorado, and New Mexico.

All states do not use the same type of report forms in reporting evening school work. Because of this difference, some data could not be obtained on all the 162 schools studied.

Organization of Evening Schools

It is quite generally agreed by teachers of evening schools that the most important phase of the work is the organization of the class. It is evident that the prospective members of the class must be sold the idea and a great deal of interest inspired before much can be accomplished in the way of instruction. This study shows the methods and agencies for creating interest in this type of work ranked in the following order: personal interviews, local newspapers, letters, "key" farmers, group announcements, telephone calls, and F. F. A.

Places Where Meetings Were Held

The places where the meetings were held ranked in the following order: Classroom of all-day schools, rural school buildings, and grange or community halls. It would appear that the important things to keep in mind in selecting the place of meeting are to choose a place the members can reach easily and be comfortable in, and where the leader can have the necessary equipment to carry on his work.

Enterprises Taught

This study would indicate that a wide variety of enterprises is studied in the Western states. The number and percent of the different enterprises selected are shown in the following table:

Enterprise	Number	Percent
Poultry	47	29.0
Dairy	32	19.8
Swine	6	3.6
General livestock	7	4.3
Farm mechanics	16	9.9
Farm management	8	5.0
Vegetable production	2	1.3
Potatoes	2	1.3
General crops	9	5.5
Horticulture	8	4.9
Farm bookkeeping	2	1.3
Marketing	4	2.5
Fruit packing	5	3.1
Soils problems	5	3.1
Landscaping	5	3.1
Total	162	100.0

Enrolment and Meetings

Since the evening school is intended for all who need it, want it, and can use it, the enrolment should be made up largely of those actively engaged in farming. The number of schools reporting the different items varies, because some reports did not contain all data, but the following summary shows the most important facts on enrolment and meetings brought out in this survey.

	Number	Percent
1. Enrolment		
(a) Schools reporting	148	
(b) Total enrolment	4652	
(c) Average enrolment	31.4	
(d) Schools having 8 to 17 members	50	33.9
(e) Schools having 18 to 27 members	48	32.5
(f) Schools having 28 to 37 members	21	14.2
(g) Schools having 38 or more members	29	19.4
2. Average attendance		
(a) Schools reporting	44	
(b) Total attendance for 44 schools	1068	
(c) Average attendance per school	24.3	
3. Number of meetings		
(a) Schools reporting	148	
(b) Total number of meetings	1945	
(c) Average number of meetings	13.1	
(d) Schools holding ten meetings	92	62.2
4. Frequency of meetings		
(a) Schools reporting	68	
(b) Schools meeting weekly	30	46.1
(c) Schools meeting twice a week	16	24.6
(d) Schools meeting three times a week	4	6.2
(e) Schools meeting daily	4	6.2
(f) Schools meeting twice a month	7	10.7
(g) Schools meeting once a month	4	6.2
5. Length of class periods		
(a) Schools reporting	127	
(b) Schools having class periods of 120 minutes	100	78.8
(c) Schools having class periods shorter than 120 minutes	16	12.7
(d) Schools having class periods longer than 120 minutes	11	8.5

Methods of Teaching

Reports from most of the schools indicate the method of teaching used in conducting the school. Thirty-nine percent of the teachers conducting evening schools used the conference method. A combination of the conference and lecture methods was used by 33.3 percent of the teachers, while 27.7 percent used a combination of the conference and demonstration methods. The method of teaching to use depends very largely upon the job being studied, the experience of the group, and the material on hand.

Number of Teachers

During the course of an evening school, jobs may arise which the instructor feels could be handled to advantage by some specialist in the community. In such cases the qualified person may be asked to take over the class for one or more meetings. The most interesting facts regarding the number of teachers used per school are shown below:

	Number	Percent
(a) Schools reporting	128	
(b) Teachers for 128 schools	212	
(c) Average teachers per school	1.7	
(d) Schools having one teacher	89	69.5
(e) Schools having two teachers	15	18.7
(f) Schools having three teachers	13	10.1
(g) Schools having four or more teachers	11	8.7

Kind of Supervised Practice

All of the teachers reported doing some follow-up work on the farm. Ninety-three percent did some supervision by personal interview, while 40 percent did some group supervision. Other types of supervision reported were by telephone and letter.

Conclusions

The writer has drawn the following conclusions after studying the reports and other references on the subject:

1. The most effective way to organize an agricultural evening school is to make a definite survey of the enterprises in the community, in order to determine the needs of the farmers and then to follow up with personal visits, especially to influential or "key" farmers. Newspaper publicity concerning the school is effective as a means of organization.
2. To be successful, the instructor should throw at least a part of the responsibility of the organization upon influential farmers in the community.
3. Evening classes should be held in the teacher's all-day vocational classroom if the evening school is located in his immediate community. If it is held in other localities, the rural school, grange hall, or other place of meeting should be used.
4. The class and instructor together should decide upon the problems of study after the enterprise has been selected.
5. The particular methods and devices used in classroom instruction depend much upon the nature of the course given. However, the conference method of teaching on the whole is most commonly used and is the most effective.
6. The jobs taught should be largely managerial if they are to be adopted by the farmers.
7. The time to hold meetings should be determined by the convenience of the group and the instructor.
8. To be most effective, the school should consist of at least ten meetings.
9. Best results are obtained from classes having an average attendance of 25 or less. However, when the enrolment is less than ten, there may not be enough experience in the group to conduct a satisfactory conference.
10. In most cases the local instructor is the logical person to instruct the group, since he is the one who will supervise the follow-up work. However, specialists may be called in for a meeting when dealing with special problems.
11. Newspaper publicity and social activities may be used advantageously as a means of maintaining interest in the meetings.
12. Provisions should be made for follow-up work at the time the meetings are held.

Evening Class Instruction Gets Results in Community

V. E. GRAHAM, Teacher, Walnut Grove, Mississippi

DURING the summers of 1932 and 1933 I made careful surveys and observations throughout the community. This information showed that the community was greatly lacking in three important phases of agriculture: first, the farmers were not growing sufficient feedstuffs, especially roughages; second, there was nothing definitely and regularly being done to improve the soils; third, there were about six varieties of cotton being grown, most of these badly mixed.

Of course, there were other deficiencies, just as would be found in other communities, but these were outstanding, and I made my plans to remedy them first. I realized that if I was to accomplish much in this direction I must first carefully prepare definite and concrete information and then present this to the farmers in a manner that would convince them of their needs.

Last winter, with the above information compiled, I scheduled a series of evening classes on Farm Organization over the community. These classes were to continue over an indefinite period. We started out by figuring food and feed needs of an average family of five and then figured the needs of the individual farmers present. This showed that some farmers did not grow sufficient corn, that others did not grow sufficient pork and lard, and that very few produced enough hay. Many other things were brought out. With these conclusions reached, such questions as follow arose and were thrashed out in future meetings: Is it not to my advantage to cut cotton acreage and give more time and land to these other enterprises? How can I produce the most and best feedstuff per acre? How does corn compare with hay in production of digestible nutrients per acre? What plant will produce hay most economically? Then the question of soil improvement arose. Also, the question of all growing one variety of cotton—and many others. These discussions continued for 8 meetings in one center and 12 in two other centers.

Total results of this work can never be compiled. And there is a great deal that cannot be seen before next fall, or even next year, but the following results are already visible, and I think are indicative of an intelligent group of farmers: Forty men have planned to produce a greater supply of either food or feed, or both, with an increase in

Walnut Grove evening class observing hairy vetch and oat project of one of its members

hay and pork being outstanding. In order to best meet the hay situation and, at the same time, enter into a permanent soil building program 37 men have properly inoculated and planted soybeans. Of course, a few of these have grown beans before, but they have increased their plantings this time. Some are making only small plantings, which probably represents excellent judgement. Fifteen farmers have made nice plantings of lespedeza. Sixty-two men have joined in with the one-variety cotton organization, with 45 purchasing foundation seed directly from the breeder and the others using first-year seed. Most of those buying seed from the breeder bought only a few bushels, in view of growing seed for their entire crop another year.

Many other improvements are also under way. For instance, 20 men are growing soybeans for seed purposes. Several have secured pure seed corn. Many purchased a high fertilizer instead of the average 4-8-4, netting a saving of around $3.50 per ton. Many others mixed their own fertilizer according to formulae prepared in the school, saving from $3.50 to $5.00 per ton.

Puerto Rico Emphasizes Follow-up Work in Agricultural Evening Classes

NICHOLAS MENDEZ, Itinerant Teacher Trainer, San Juan, Puerto Rico

WE have had an opportunity, during our inspection trips to the different centers in Puerto Rico, to notice the great reaction that has taken place towards scientific agriculture, which has come about, no doubt, by the influence of the new and improved practices adopted by farmers during the classes.

This marked improvement so far noticed should be the incentive for follow-up work to be done by the teachers. Evening class reports show a large number of improved practices which farmers enrolled propose to follow. The responsibilities of the teachers will never be fulfilled if they do not direct those farmers in the accomplishment of what they promised to do on their farms. Professor Schmidt says, "To leave out or to ignore the directed or supervised practice work in evening classes takes the heart and soul, the vital core, out of any vocational training. Moreover when this practice is lacking, the work is not vocational."

Follow-up work will help adult students to remember the correct way of performing a job or reaching a decision which they either forgot or interpreted in the wrong way. If the teacher goes to each class member while he is performing the job, the opportunity will be excellent to overcome errors of the above-mentioned type, besides giving additional information concerning his own particular problems. During these visits to the farmers, teachers should give the impression that they are cooperating and not quizzing. The spirit of cooperation will be greatly appreciated by the farmers, and they will realize that there is no better friend in their community than the teacher of vocational agriculture.

Follow-up work should be started while the meetings are being held, and continued throughout the performance of the enterprise. Besides eliminating possible doubts of the farmers, it will eliminate guess work by the teachers in estimating the financial value of the new or improved practices in making final reports of the courses.

A definite system should be devised

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Future Farmers of America

BOOKS FOR FUTURE FARMERS

Microbe Hunters and Hunger Fighters

MICROBE Hunters and *Hunger Fighters* by Paul de Kruif are two books now available in the dollar editions, obtainable at almost any bookstore. This information should be welcomed by F. F. A. chapters and teachers of vocational agriculture. These books have been published for some time and reviewed often, but their value to teachers and students cannot be over emphasized.

Each chapter in the books is a unit or story in itself. This plan makes the books of particular value because busy students do not have to read the whole of each book in order to enjoy it.

Teachers may well use those books in guiding their students in developing wider understandings and appreciations. From *Hunger Fighters* students may learn how Carleton searched the plains of Russia for a rust-resistant wheat to be grown by the prairie farmer. The story of Marquis wheat, grown extensively in the spring wheat belt of the northwest, is dramatic in its relation to the lives of three Canadians: Angus Mackay, a Presbyterian pioneer, and Drs. Charles and William Saunders, two men interested in plant breeding.

When hog cholera becomes the topic of study and discussion, refer students to the account of how Dr. Dorset fought this plague to a standstill. A knowledge of the great contributions of Mohler, Schull, Babcock, Steenbock, and Goldberger to the art and science of agriculture are available to anyone willing to spend a few minutes in reading *Hunger Fighters*.

From *Microbe Hunters* it is possible to learn how Leeuwenhock, born in 1632, gave man the power to see things hitherto invisible. How did he do it? Read the first chapter of the book. "Mad dogs" and "mad people" were common until Pasteur learned how to curb this awful combination. The story is thrilling in its human interest. Ticks and Texas Fever, malaria, yellow fever, and other destructive agencies to man and beast have been conquered by heroes whose stories are told by Paul de Kruif in *Microbe Hunters*.

Why not add these books to the F. F. A. library and use them in becoming well informed? If possible secure *Men Against Death* also by de Kruif. This book, a recent (1932) publication by Harcourt, Brace and Company, is higher in price than the other two books, but it is distinctly worth the cost.—L. E. Jackson.

West Virginia Chapter Cooperates in Buying

THE Wayne County Chapter of Future Farmers of America, West Virginia, have recently balanced their books for the year's work. These boys have purchased cooperatively during the year 800 bushels of seed potatoes, 10,200 White Leghorn baby chicks, 11,332 bars of candy, 16 tons of poultry feed, 300 bushels of soybeans, 20 tons of fertilizer, 20 bushels of garden beans, 5 bushels of certified seed corn, 20 tons of burnt lime, 1,750 pounds of spray material, 13 purebred hogs, and a 1½-ton Chevrolet truck for use by chapter members in cooperative marketing of products raised. Their total cooperative buying activities have amounted to $5,133.61. These purchases were made by F. F. A. member-committee men appointed to have charge of each respective purchase. The seed potatoes were obtained from F. F. A. boys of the William Broyles chapter of North Dakota. The Wayne Chapter had 63 members during the past year. It won first place in the state "Better Chapter" contest. (See cover picture.)

Summer Camps and Trips of Delaware Future Farmers

DURING the past summer, after exhibiting at the State Fair, the Delaware F. F. A. boys spent many enjoyable days camping and sightseeing. Oak Orchard, Delaware, seemed to be most desirable for the majority of chapters. Harrington, Caesar Rodney, Bridgeville, and Georgetown each spent a week there, playing each other in baseball, volleyball, quoits, and horse shoes, and in swimming contests. One evening a square dance was held, and girls were invited. Each group had its own cooks and assistants, the assistants changing every day.

Each camp had its own rules, and the boys had no trouble in living up to them. A list of rules, taken from the bulletin board of the Bridgeville camp, follows:

No smoking in camp
Everyone must be in bed by 11:00 p. m.
No food can be kept around the bunks
No one allowed in boats alone
No hanging on trucks or cars while in motion
No diving in shallow water
Allow one hour before going into water after meals

During the evenings, violin, accordion, and harmonica music was played by various members of the groups, while others played checkers and cards.

Usually the first night in camp, there was much commotion, such as upsetting the other fellow's bed and talking, but after everyone had his turn, all were willing to sleep. In all, the four chapters had 92 boys in camp, and they entertained 235 parents and friends.

The Milford chapter of 43 boys took a four-day trip to Virginia, Maryland, and Washington, D. C., visiting the Shenandoah Valley, Luray Caverns, Blue Ridge Mountains, Virginia farms, Mt. Vernon, points of interest in Washington, and the Government Experiment Farms at Beltsville, Maryland. The trip was made in school buses, and expenses defrayed by chapter dues and class projects.

The Seaford chapter had a tour through Pennsylvania and visited a Ford factory, a Sun Oil plant, mushroom houses, the Crystal Caverns, the Hershey Chocolate factory, the Lancaster stock yards, the Armstrong Cork and Linoleum factory, several cigar factories, and many dairy farms. Twenty-eight boys enjoyed this trip. All meals were cooked by the boys enroute. Nights were spent in tents.

Other chapters taking similar trips were Laurel, Middletown, Milton, and Greenwood. The DuPont and Newark chapters took camping trips to points outside of Delaware.

The total number of Delaware boys to enjoy trips this summer was 245. We feel that such trips are well worth while. They give the boys an opportunity to meet boys of other groups and to discuss agricultural problems with them. They also make a closer tie between the various chapters of the state, and as these boys will be entering advanced vocational agriculture classes this fall, the experiences of the summer should be of help to them in their work.

Future Farmers Build Mountain Trail

Barton, Vermont, Chapter Cuts Interesting Trail to Top of Sugar Loaf Mountain in Hazen's Notch

FIVE members of the Barton, Vermont, Chapter of F. F. A., accompanied by their adviser, Mr. P. K. Hooker, had a camping trip during the past summer to the Fred H. Tucker Camp on the Long Trail in Hazen's Notch, and during their two-day stay cut a new trail to the top of Sugar Loaf Mountain.

A jagged cliff rises to a sheer height of 700 feet above the highway. Formerly there was a trail leading around the face of the cliff and to the top of the mountain, but it had become so overgrown with brush that it was impossible to follow it except in a few places, and the job undertaken by the chapter members was to cut a new trail.

The boys shouldered their axes, bush hooks, and machetes and proceeded to blaze and cut the new trail leading to the cliff and summit. The second day of their stay they painted the blazes with light blue paint (the Green Mountain Club's official color for side trails) and erected signs for the guidance of hikers and tourists.

Near the highway they placed two signs. One was a plain sign inviting tourists and hikers to climb Sugar Loaf Mountain via the new Future Farmer Trail. The other was an arrow sign pointing along the main trail and worded, "Follow Main Trail (white blazes) 575 feet to the Future Farmer Trail." Where the new trail leaves the main trail are two arrow signs, "Sugar Loaf ¼ mile" and "Future Farmer Trail." On top of the cliff is a sign labeled "Montgomery Valley View," calling attention to the magnificent view of the valley. From the top of the cliff the entrance to the trail that continues to the summit is rather obscure, and there the boys erected another arrow sign lettered, "To the Summit of Sugar Loaf Mountain." On the bare rock on the summit they painted "Sugar Loaf 2543." (The figures represent the number of feet above sea level.) To make the trail a distinctive Future Farmer Trail, the blaze painter painted a small, round, red dot in the center of each blaze.

The boys of the Barton Chapter extend a cordial invitation to Future Farmer mountain-climbing fans throughout the nation to visit the Green Mountain State, and while there we hope you will make use of what we suspect is the first Future Farmer Trail in the country. In view of the close relationship of the forests to our national agriculture, would it not be worth while for other chapters in forested areas to build Future Farmer Trails? What other activity would be more wholesome than one which interests boys in preserving the beauty and value of our forests?

From an Arkansas Reporter

RALPH INGRAM, Reporter, Lavaca Chapter, Arkansas

THE Lavaca, Arkansas chapter is pioneering in two fields—radio broadcasting and a study of vocations other than agriculture.

Our boys stage a radio program of music, short talks, and announcements over KFPW at Fort Smith, Arkansas, every fourth Saturday at 6:30 to 7:00 a.m. Thirty-two of our 37 members have participated. We make use of our band, consisting of two guitars, a mandolin, a banjo, a violin, and six harmonicas. Also, we have two vocalists who sing both solos and duets. Thus far we have given six programs, which have been announced by our president, Emmet Keith. In addition to this monthly broadcast, the chapter participates in the State Chapter broadcast from Hot Springs, where each chapter gives one program each year.

In our study of vocations other than agriculture we have a discussion each month by a leader in his particular vocation. Local talent is used as much as possible. An outline is given each speaker well in advance of his date, so that he may prepare his discussion along lines that interest the boys. The chapter realizes that not all of the group will be farmers, and that an opportunity to study other vocations early in life may prove valuable. In connection with this phase of our program of work, tours are made from time to time to factories and meat packing houses in Fort Smith, to study various industries.

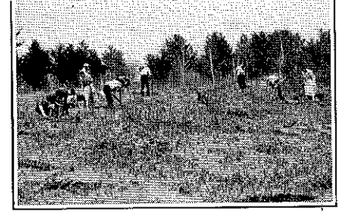
Reforestation as an F. F. A. Project

B. R. DUGDALE, Instructor, Bruce, Wisconsin

IN the spring of 1932 the Bruce High School, Bruce, Wisconsin, acquired by gift from the County Board of Commissioners of Rusk County 40 acres of tax delinquent land within the limits of the village of Bruce.

The administration of this project naturally fell to me as agriculture instructor. The first job was to determine the type of trees to plant. Basing my decision on the fact that a few scattered White and Norway Pines were already growing there and after consulting the state extension forester, I decided to plant only those two varieties.

With this as a stimulus the F. F. A. chapter of the Bruce High School made the reforestation project a part of the long-time program of work. In the spring, before any planting of trees is done, the F. F. A. members devote several class periods to "brushing" the area to be planted that year. When planting time arrives, usually in May, the members of the chapter mark off acre plots and plow furrows six feet apart. Planting the trees in furrows is the best method where the land is fairly open. Where there is too much brush, we do "spot planting," being sure the trees are six feet apart each way. We have secured a 90 per cent stand of living trees by planting in furrows, in spite of the extremely dry weather of the past two years.



Planting 13,000 seedlings

The trees for planting are secured from the State Nursery and are usually three- or four-year transplants. This year, however, we were sent two-year seedlings. Since these were too small to plant in the open, the F. F. A. members constructed a seedling bed in which we planted the 5,000 seedlings received. Next year these will be transplanted into the plots.

As this is an all-school project, a great deal of organization was needed to make the most efficient use of time.

The following plan is used to advantage. On the day we plant the trees the schedlue is as follows:

9:00-10:30 Seniors
10:30-12:00 Juniors
1:00- 2:30 Sophomores
2:30- 4:00 Freshmen

Senior F. F. A. members are assigned as squad leaders. The squads consist of three students: One makes the hole, another plants the tree, and the third carries the trees in a pail with water in it to keep the roots from drying out. This procedure is carried out in the same manner with the other three classes. It is efficient, as we have planted 4,000 seedlings easily from 9:00 to 4:00 o'clock. This plan gives the entire school a knowledge of how trees should be planted and cared for. To date we have planted 13,000 seedlings. Eight thousand of these are in the plots, there being one acre in each plot, and 5,000 are in a seedling bed as stated.

The students sign a covenant after completing the plantings. A copy of this reads: "We, the students of Bruce High School of Rusk County, Wisconsin, gladly accepting the opportunity given us to add to Wisconsin's forest wealth, and realizing the possibilities of creating in the minds of all future students a true forest attitude, to which the ideals of American Citizenship must ever be allied, and mindful that our duty today in planting forest growth and protecting forest life will confer on coming generations a material benefit, do hereby pledge ourselves faithfully to fulfill all these our obligations, thus to pass on our forest, more beautiful, more productive, and more valuable than when entrusted to us. We further agree to respect and obey all laws both legal and natural that are necessary to a full and continued enjoyment of forest life.

"Signed this 19th day of May, 1933"

This project has created an interest in reforestation in the Bruce community that could be created in no other way. All trees of any value were cut by the logging companies many years ago, and people are now beginning to realize that they must be replaced. We held a dedication ceremony under some of the large pines in the forest. Following this, people were invited to examine the plantings, and many came away favorably impressed.

As a result of the interest shown, eight boys in the agriculture department have started windbreak projects.

From the results obtained, I would suggest that reforestation in some form could be made a valuable part of the program of work in many F. F. A. chapters.

Stamping Ground, Kentucky, Local Chapter of F. F. A.

IVAN JETT, Adviser

WHEN I started teaching vocational agriculture three years ago the question, "Shall I organize a chapter of F. F. A.?", presented itself. I could think of nothing against such an organization, but I could think of a great many benefits that might come by having one. As an individual I would have very little influence in the community, but with a strong organization of thirty

boys the possibilities were unlimited. The chapter was organized, but that was the easiest part. The boys had to be kept busy or they would lose interest. The following is a discussion of seven factors that have kept our chapter growing:

1. Confidence in oneself and in the boys. The boys must believe that their adviser will guide them to success. Do not think, "I can't," or, "They can't," but always, "I will," and "They will."
2. Build a strong chapter through knowledge—knowledge of the Future Farmers of America. First, order one F. F. A. manual for each two-boy table in the agriculture room. Boys can not be interested in something that they know very little or nothing about. Teach F. F. A. in class with problems like—What is the Future Farmers of America?; How become a member of F. F. A.?; etc. Have the boys select the officers carefully. Teach parliamentary law and teach a great deal of it. Have problems on parliamentary procedure and insist that the boys use it in their meetings. Encourage self expression among the boys. Let them conduct their own meetings.
3. Financing F. F. A. The hardest and yet the most important part of the work is that of successfully financing the organization. Have the boys plan their program of objectives for the year and then raise the money to accomplish these goals. Plays, donations, basketball games, selling magazines, etc., will always bring in revenue. Try at all times to think of new things to do and new methods of doing them. Without money the chapter will not succeed. The chapter can make money, and so can the individual members, if interest and industry prevail. Remember that money and influence are nearly synonymous today.
4. Advertise. Tell your patrons, tell your merchants, tell the community, tell the county and the state of the work of the chapter. Publish a news letter at least once a month, send articles to your county paper, have announcements made at community meetings, and place exhibits of work in store windows. Make the people F. F. A. conscious. Frequent expressions should be, "The Future Farmers are going to do this," "They have done that," "They are sponsoring this," and "I wish the F. F. A. would do that." Remember the community must have knowledge before it can have interest.
5. Definite plans. If the chapter wanders, with no definite objectives in view, its accomplishments will be few and indefinite. Let the chapter make the objectives and help it to accomplish its purpose. Improving the home and school grounds, equipping the farm shop, adding bulletins to the library, conducting school fairs, promoting evening schools, etc., are a few suggestive ideas. Always be working on something new. Never stop; rest only for a short time; keep going. The world is moving and will forget one if he rests too long. Success gives confidence and a spirit that makes the chapter grow and bloom.
6. Play. One should play and be proud to do it, but never loaf. Weiner roasts, chili suppers, parties, father-and-son banquets, and a summer camping trip all help mold a strong organization. Have some entertainment feature once a month at least. Organize an F. F. A. band. Fiddle, harmonica, guitar, jug, and washboard players are found in nearly every school. They like to participate, and it will be another step to success. Hire a truck and make a trip to a large city, and visit the industries. It will be one of the most educational programs that can possibly be promoted.
7. Rewards. Everyone deserves a reward for outstanding work. Ask a merchant or a group of merchants to give a silver loving cup or some token to the best Future Farmer or to the boy having the best farm practice program. Give prizes for the best record book, and let the F. F. A. work count on the grade. If a member does good work, compliment him. Just a smile and a compliment means a great deal, especially when no one else has said anything.

Each chapter must set up a program of objectives to suit its own conditions. I have mentioned some of the things that the Stamping Ground Chapter has tried and found to work out reasonably well.—From *The Advance*.

The Future

(Continued from page 67)

bonds, bank accounts, insurance policies and real estate holdings may pass out of existence. Our children, however, will always be ours. Whatever happens to bankers, manufacturers and merchants *the efficient teacher will always be in demand.* Moreover, as leisure time increases, the demand for those who can train others physically, intellectually and spiritually will rapidly increase.—Roger W. Babson. Babson Special Letter, January 22, 1934.

Relation of Vocational Agriculture and Agricultural Engineering

(Continued from page 75)

cultural engineering in the colleges taught by men thoroughly familiar with vocational agriculture needs, with requirement that all teacher trainees take such courses, would take care of the teachers now being trained, but we need men in the field to assist those men who did not get the proper training in the institution. We have had material assistance in training teachers in service through courses given in connection with our summer conference of agricultural instructors. In our state these courses have been only a week long, but the men have felt that they were decidedly helpful.

There is no question but that there is a constantly growing need for a thorough knowledge of agricultural engineering by the farmer and the future farmer. Departments of vocational agriculture are largely responsible for that training. We need the continual assistance of agricultural engineering departments of the colleges and the American Society of Agricultural Engineers in order to properly prepare teachers of vocational agriculture for this task and to keep them in touch with developments in agricultural engineering after they take up teaching.

Puerto Emphasizes Follow-up Work in Evening Classes

(Continued from page 77)

by which each teacher will be able to keep accurate records of the results obtained by each farmer from the adoption and use of new and improved practices. A form should be prepared for this work containing the following information.

1. Name of farmers.
2. New and improved practices adopted.
3. Production.
4. Increased production.
5. Increased incomes through adoption of new and improved practices.

The information obtained will be a fine means of determining the progress attained in a community through the use of adult education. Exact information on results is the most convincing method to use in trying to establish the advisability of increasing this type of instruction.

Vocational Agriculture Exhibits at Illinois State Fair

THERE were ten vocational agriculture educational exhibits at the State Fair. The Catlin High School exhibit placed first. The caption was "Keep Healthy Chicks Healthy." It showed what "Jack Jones does in his vocational agriculture project." The exhibit from Mahomet placed second, and had the caption, "Grading Increases Market Value of Eggs." "Seed Corn Selection is Important" was the caption of the exhibit from Dwight, which placed third. The Orangeville exhibit placed fourth on "Pullets Cost Less," and the Lewistown exhibit placed fifth on "Hulless Oats Outyield Ordinary Oats by 50%." Other exhibits with captions follow: Good Hope—"Germinate Seed Corn for Increased Yields"; Canton—"Alfalfa—The Wonder Crop"; John Swaney—"Future Farmers of America"; Springfield—"Vocational Agriculture Purebred Hog Sale"; and, Delavan—"Year-Around Chinch Bug Control."

Opheim, Montana, Chapter Has Hotbed to Make Money

E. W. BJORK, Instructor

THE Opheim Chapter of the F. F. A. had a cooperative hotbed project. The hotbed was started early last spring, with the intentions of swelling the local F. F. A. treasury. The plantings were limited to cabbage and tomatoes, but in another year the boys plan to plant more of a variety. We had no trouble selling what we had, and many orders had to be left unfilled due to small size of the hotbed.