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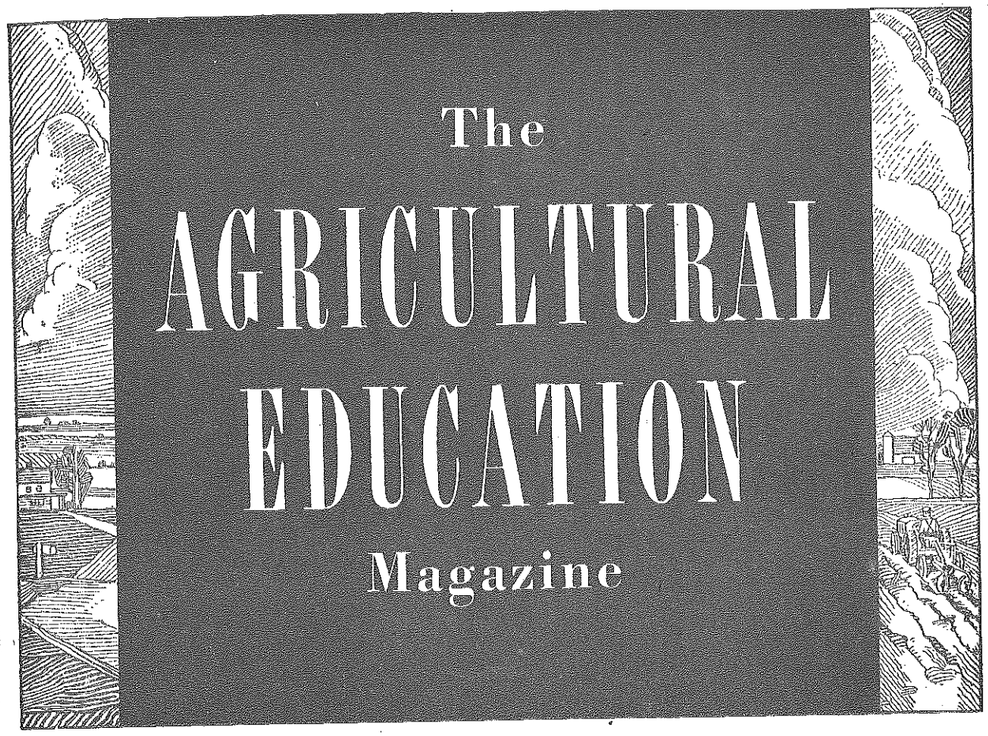

The AGRICULTURAL EDUCATION Magazine

The American system of free and democratic public education is one of the principal things for which we are fighting. Without the active participation of those who are now part of it, we cannot win the war.

—Senator Elbert D. Thomas

VOCATIONAL AGRICULTURE
For
TEACHERS
Teacher-Educators
And Supervisors
OFFICIAL PUBLICATION

The Agricultural Education Magazine

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

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Growth

THE Agricultural Education Magazine has made rapid and consistent growth from its beginning in 1929. Its circulation has kept pace with the phenomenal growth of vocational education in agriculture in the United States. In the beginning there were less than 2,000 subscribers. In 1941, 12 years later, the circulation reached 7,558.

According to the business manager's 1941 report every teacher of agriculture, teacher-trainer, and supervisor in 20 states were subscribers. In 31 states 75 percent or more of those connected with vocational education in agriculture are subscribers.

The magazine has not only grown in circulation but also in scope of teacher participation. It is a teachers' magazine and has become the medium thru which teachers pool their experiences and points of view. On the average during the past five years, teachers, teacher-trainers, and supervisors from 41 states have annually contributed to the pages of the magazine. In the last five years every state but two in the union and Puerto Rico has submitted and had published one or more articles.

Those largely responsible for the magazine's marvelous growth in circulation and teacher-participation are its five former editors and the business manager.

Dr. H. M. Hamlin, then of Iowa, now of Illinois, served as the first editor from 1929 to 1930. Dr. Sherman Dickinson of Missouri took over in 1930 and served thru 1932. Dr. Carsie Hammonds of Kentucky carried on from 1932 to 1935. Dr. Roy Olney of West Virginia, now of New York, served from 1935 to 1939, when Dr. H. M. Byram of Michigan took over. Dr. Byram completed three years of service with the March issue.

Dr. W. F. Stewart of Ohio has devoted much time and effort to the magazine. His faith in the magazine as an instrument for professional improvement and his enthusiasm in promoting its circulation has inspired loyalty on the part of all workers in agricultural education.

Taking Over

The present editor is beginning to understand and to appreciate the fine contributions of the former editors to the magazine. We are impressed by the effort and energy that they must have put into the publication.

Dr. Byram has been most generous with his time in advising and assisting us in taking over the responsibilities of editor. He has set a standard that is a challenge to those of us who are to follow him. His advice and help during the year will be appreciated.

Our Responsibility

No person has ever taken over the responsibility of editing a magazine with a greater sense of humility than the present editor. We are encouraged by the expression of confidence of the editing-managing board and the many evidences of co-operation on the part of special editors, teachers, and other workers in vocational education in agriculture. These expressions of confidence and evidences of co-operation inspire us to undertake the task with enthusiasm and with a high sense of responsibility.

Contributions

The magazine belongs to teachers, teacher-trainers, and supervisors in vocational education in agriculture. It will be as good as you make it. Write for the magazine. Write articles about your instructional program, about your boys, about your part-time and evening classes. Experiences and plans for the summer and for the opening weeks of school are especially appropriate at this time. In fact, write about anything that you think will help teachers, teacher-trainers, and supervisors to become more effective in instructing the rural youth and the farm people of the United States. There are few in this field of education who do not have a worth-while contribution to make.

A. W. Tenney

Presenting the Special Editors

The special editors of this magazine render an important and worth-while service. Their function is to stimulate you to contribute articles for the magazine, to edit the articles, and to pass them on to the Editor with suggestions about their use.

W. H. Martin

The high quality of articles appearing in the several sections of the magazine is evidence of the effort, energy, and good judgment of the editors of these sections. Some of these men have served a long period while others have been on the staff for only a short time.

Mr. A. W. Tenney has accepted appointment as special editor of the Future Farmers of America Section. Mr. Tenney is Assistant Teacher-Trainer at the University of Florida, Gainesville, Florida. He is a graduate of the University of Florida and of the Ohio State University. He has done advanced graduate work at Cornell University and New York University. Mr. Tenney is well qualified as special editor for

(Continued on page 198)

A. K. GETMAN **Professional** R. W. GREGORY

Agricultural Planning for Defense*

THOMAS L. AYERS, U. S. Department of Agriculture

T. L. Ayers

IT IS a privilege for me to appear before this group of leaders in the field of vocational agricultural education. You here today, and the thousands of teachers associated with you in your daily work, stand perhaps closer than any other group to the individual farm families of this country.

The farm people whom you serve look to you for guidance and counsel in these critical days and the uncertain years ahead.

My theme has to do with the plans the Department of Agriculture is working out to meet the immediate demands of national defense, also plans being considered for the indeterminate period that will bring us to the end of the war, and finally plans being laid to help rebuild our country and the world when peace finally comes.

Our First Task

Our first and most pressing agricultural task, as you all realize, is to meet the farm goals set for 1942. By now you are well acquainted with these goals, both from the point of view of the nation as a whole, as well as of the particular farming community in which you live and work.

We want our farmers to be well informed as they set about attaining their own individual goals on their own plot of land. What are the goals all about? Does it make any difference whether we reach them or fail to reach them? In other words, just what is the farmer's stake in this whole defense effort of ours?

My own feeling is that the time has come to clear the air on this whole question and dispel once and for all the fog that has been hanging over us since the opening of this second World War. There is no longer any profit in debating the pros and cons of getting in or staying out of this war. Japan has settled that question for us.

Our nation, thru a succession of Acts of Congress—a Congress which we elected to serve us—and thru a succession of clear statements from the president of the United States, whom we elected to serve us—has solemnly committed itself to the defeat of the Axis powers.

To falter and fumble now is to paralyze the national will and actually threaten our continued existence as a great power among the nations of the world. All our planning, either for the immediate future or the ultimate settlement, depends on our winning the war. If we lose, plans that we make will be useless, as someone else will then do our planning for us.

Our Hands Are to the Plow

Our hands are to the plow. There can be no turning back except at the risk of defeat and disaster.

We approach our war effort with an agricultural plant comparable in many ways to our physical farm resources at the outbreak of the first World War. Our total crop land, our farm population, our grass lands and woodlands are about the same, but the location and character of these have changed somewhat.

Owing to mechanization, about 50 million acres, at that time devoted to producing feed for workstock, are now being put to other use.

We have at least 40 million more mouths to feed, 30 million more of our own people and 10 million in Britain.

Our farms are better equipped mechanically and in technical skills.

Futhermore, agriculture is far better organized to cope with the emergency of war than at any time in its history. The action programs of the Department of Agriculture have provided the farmers with the means for unity and concerted effort such as were not available during the first World War. These are now standing us in good stead as we face the goals for 1942.

How Goals Were Derived

I should like for every farmer in the country to know just how we arrived at these goals. It is an inspiring story. It marks one of the high points in the nation's agricultural history. Early last summer the Secretary of Agriculture called in the leading experts of the Department. He asked them to estimate the total supplies that we would have on hand at the beginning of 1942, the probable demand during 1942, and the reserves—including stock-piles—that we should have on hand at the end of 1942. These demand estimates included the definite commitments which we have made to other nations. The estimates, of course, took into account a larger domestic demand.

Once the total needs for 1942 were charted, they were then matched against what the American farm plant in all probability could produce during the coming year. In some cases this was easy enough, in others it was extremely difficult.

Every farmer knows, for example, that a cow and a hen are not to be compared to an airplane factory which can be speeded up to a 24-hour day, seven-day week level of production. Cows and hens have been working on that schedule all these many years. Furthermore, we ran into a number of other difficulties. For one thing, we encountered the fact that we may be faced with a distinct shortage of skilled farm labor, fertilizer, spray materials, and farm machinery. We have simply got to get along as best we can with what supplies are available in these categories. Those in charge of allocating materials are showing a disposition to take into careful account the needs of agriculture in meeting the 1942 goals and other goals that may lie ahead. Selective Service Boards are giving a sympathetic hearing to boys who are sorely needed at home on the farm perhaps more acutely than in military training camps.

Our goals with respect to some items are really a compromise between what we would like to produce next year and what we are convinced the agricultural plant can actually put out.

All-Out Enlistment of Farmers Called For

The implications of this whole situation are interesting and significant. For one thing, it means the all-out enlistment of every farmer in the country. It should give them a renewed sense of their indispensability to the national economy. It should give them a definite yardstick with which to measure their contribution to the total national effort. And also, it should give them a sense of their solidarity as a group thruout the length and breadth of the country.

It is also important that these 1942 goals (calling for an all-time, high peak of production except for our surplus crops such as cotton, wheat, and tobacco) are going to be attained, we hope, without impairment of our agricultural plant.

We do not want to repeat the tragic mistakes of the first World War when we plowed up 40 million acres of grass—a vast area of new land that had never before been broken. You are familiar with the dust storms and other serious damage to our soil that resulted from our feverish efforts to produce the food to win that war.

This time we are determined, insofar as we are able, to maintain the productive capacity of our farm land while we are increasing the total output of the plant. There should be no lowering of the standards of good farm practices in carrying out the 1942 and later programs. Farmers are being asked to produce more from each acre and more from each animal unit rather than to extend the area of crop land. Soil conservation measures should go hand in hand with farming for defense and war needs.

Defense Needs and Soil Conservation Needs Closely Allied

In fact, you cannot distinguish between defense needs and soil conservation needs. The two are closely interrelated. When all is said and done, one of the biggest farm problems, from the long-range point of view, is maintaining and increasing the productivity of our soil. We have made much progress along this line these last few years. But the sober fact remains that the process of deterioration is still advancing more rapidly than is the process of upbuilding the soil.

This is especially important since the demands for 1943 will in all probability be greater than for 1942 and the temptation stronger to lapse into unwise farming practices.

The good results of wise planning in the past we see before us today as we enter upon the tasks ahead of us next year. Those corn bins we planned and built and filled in recent years are most welcome at the present time. Also the farm programs with their emphasis on systematic planning and co-operative effort on the part of six million farmers stand us in good stead today. The farmers have been trained to think and act together in terms of national needs. This training may prove of decisive importance in agriculture's final contribution to the defense program and to the post-war settlement.

One effect of the 1942 goals, perhaps, has been to unify the Department of Agriculture as nothing else has ever done. All agencies are working together in harness. They are bringing all their talents and resources to bear on one common objective. I understand that the same spirit of unity prevails in the ranks of all farm organizations in all parts of the country.

This should be an inspiration to the Nation as a whole. Certainly it is setting a fine example of unity to the leaders in groups.

What About 1943?

Now, what about the aims for 1943 and the years immediately following?

All we can say with any certainty is that with this war continuing at least another year, the farmers will be called on for greater production levels as a whole than for 1942. This will be true particularly in the production of animal protein items—beef, pork, milk, eggs, and related products.

This means we must get before farmers the fact that they must plan and take action now for this increased production in 1943. They must begin now looking ahead to providing feed and improving feeding practices, seeing about the possibilities for pastures, and laying their plans for their own individual share of livestock and poultry production.

In many areas of the country this intermediate period may well be used to step up the production of food and feed for home use. This will serve a double purpose. It will improve the standard of living on the farms. It will also release quantities of food and feed that are needed in other areas of the country and for export to those people who are aiding us in this war.

In the background of all our efforts stands the realization that one day this war will end. The greater part of our armed forces will return to civilian life. Our factories, mines, and forges, now keyed to the production of munitions and other implements of destruction, will be faced with serious problems of readjustment.

It is to be hoped that we do not confront these prospects in the same planless and aimless manner in which we scrambled back to peacetime pursuits in 1918 and 1919. We might just as well get it into our heads that after this war there can be no "return to normalcy." Our defense efforts at present are not to be compared in complexity with the efforts we shall have to make to prevent wholesale dislocations during the coming period of reconstruction.

From all indications, our leaders in government and private enterprise are keenly aware of what we shall all be up against. Accordingly, plans are being laid now to tide us over the critical years ahead.

The Heart of the Problem

In terms of human relations, here is the heart of the problem:

What are we going to do with the 23 to 26 or 27 million of our population who will have to fit themselves into a peacetime economy? How are we going to make this change without undergoing agonizing months, perhaps years, of unemployment and suffering?

It is to these questions that the Department of Agriculture, as well as other agencies of your national government and many agencies of private business, are directing their attention.

I can tell you a little of what the Department of Agriculture has in mind.

Machinery is now being set in motion to carry us thru the period of transition, not only with the least possible disturbance but also with the greatest possible opportunities for the fuller and richer life for all of us when we finally win this war.

Before I begin to outline what the Department is doing about post-war plans for agriculture, let me give you a brief statement of the profession of faith, so to speak, of the leaders who are laying the ground plans for the future with special reference to the farmers of the country.

Post-Defense Planning

I quote from the introduction to the "Manual for Post-Defense Planning" issued by the Department of Agriculture.

"a. This work will be based on the assumption that there can be no stable peace until the power of the Axis is crushed, and democratic, just, political and economic conditions can be established . . .

"b. If there should be a truce or a stalemate, instead of a defeat of the Axis, both sides would undoubtedly continue to arm to the teeth, and the problems of adjustment back to a peaceful world would not appear for many years. Plans for restoring a normal peacetime society must be based upon the assumption that the Axis has been defeated and that a world free from ruthless aggression has been re-established.

"c. It is also assumed that if the necessary steps are taken, it is not inevitable that our industry will collapse into a period of depression and unemployment after the war. It is recognized, however, that unless strong, prompt, and carefully planned measures are used to prevent such a depression, it will occur inevitably. The task of post-defense planners will be to help work out the things that need to be done to prevent the post-war depression *before it happens*, instead of trying to cure it after it happens.

"d. The great powers of production the Nation is building up for the destructive purposes of war can be used just as fully for the purposes of peace. It is possible for people to work just as hard to make the world a better place for them and their families to live in after the war as they are working to defeat and destroy the Axis during the war. One job of post-defense planning is to find the means of directing these energies into building increased standards of living after the war is won."

Secretary Wickard has set up a Department Committee on Post-Defense Planning and nine regional committees corresponding to the nine principal agricultural areas of the country. These committees will work in co-operation with the state agricultural colleges and the state and county agricultural-planning committees. I understand that the membership of these committees includes some 122,000 farm men and women in nearly 1,900 counties.

Teachers Serving on Planning Committees

Many from your own ranks are serving on these committees. For example, more than 1,600 local agricultural teachers are serving on county committees in 46 states.

The post-defense planning will proceed along three major fronts:

First—A program to conserve and build up the Nation's physical resources, including forestry, soil conservation, flood control, water facilities, range improvements, and similar tasks.

Second—A program to provide services and facilities needed by farm people, such as rural housing, medical care, rural electrification, education, recreational centers, and better marketing facilities.

Third—A study of agricultural-industrial relations in the post-defense period. This will include analyses of such problems as decentralizing industries wherever possible and feasible, wider distribution of farm products to those who need them, holding on to our share of foreign agricultural markets after the war, and ways of maintaining industrial output and employment at a high level.

All these activities will be closely coordinated with similar work in other fields being done by the National Resources Planning Board, the Public Work Reserve, the Federal Security Agency, and other Government and private agencies.

No Boondoggling

With co-operation from the masses of farm men and women we hope to avoid what, for lack of a better term, we call "boondoggling." Employment just for the sake of employment, projects just for the sake of projects, is out.

You all remember how many jokes arose out of the spectacle of men raking up leaves, digging ditches, and then filling up the same ditches with dirt, leaning on their spades and shovels. Well, the joke was really not on the men who were compelled by circumstances to engage in these pointless activities. They had no choice in the matter. Their families had to eat. The joke, as a matter of fact, was on us. But perhaps I should not call it a joke. It was a serious indictment of our lack of imagination, our shortsightedness, our utter unpreparedness to deal adequately and constructively with the situation.

We are resolved not to repeat these mistakes as we confront the problems of the post-war world. We are determined to keep our manpower fully employed—not on trifling and inconsequential odds and ends, but on the vastly important job of rebuilding our country from the remotest farm or ranch to the congested areas of our largest cities. I mean rebuilding on a scale equal to our resources of men, materials, and skill.

This, then, is the general setting for the problem. The Department of Agriculture is moving into action on one sector of the front—the farm front.

(Continued on page 195)

A. M. FIELD

Methods

Community Co-operatives*

D. M. CLEMENTS, Regional Agent (Southern) U. S. Office of Education, Washington, D. C.

CALVIN COOLIDGE said, "All human society is a vast system of co-operation. It began with the discovery that two people could together roll a heavier stone or move a bigger log than could be done by one alone."

D. M. Clements

The farmer is by nature and tradition a rugged individualist. For generations after this country was settled he was forced to provide the food, clothing, and shelter for himself and his family thru his own efforts and thru the assistance of his family. He never recognized farm family effort as co-operation.

As the country became more thickly settled and farmers began to have neighbors they began the practice of borrow and lend as well as the exchange of labor, but they never thought of that as co-operation. In later years farmers have begun to realize that there are a few things that they can do alone, that there are more things that they can do together, and that there are many things that they can do when working together on a national and international basis.

Struggle of Co-operatives Over

I am going to be bold enough to say that I think the real struggles of co-operatives are about over. There are many reasons for this statement but the reason I wish to give comes from the efforts of vocational agricultural service in this country. "Train a child up in the way he should go and when he becomes a man he will not depart from it." Thru the National Organization of the Future Farmers of America, the farm boys are taught co-operation thru participation. Also the young men on farms practice co-operation thru their Young Farmers Associations; and adult farmers organize co-operatives and engage in co-operation in connection with their evening classes.

There has been assigned to me the presentation of an over-all picture of Community Co-operatives that are influenced by teachers of vocational agriculture. Had this assignment been given to me or anyone else five years ago there would not have been available enough material to make possible a creditable picture. I have been able to gather so many cases of Community Co-operatives that it is impossible to present all of them at this time. I am sure that had my investigation extended outside the twelve southern states, the examples would have been increased

Examples of Community Co-operatives

The states of Georgia and South Carolina are typical of service co-operatives that are in existence thru the influence of teachers of vocational agriculture. Community canning plants seem to be the most outstanding examples. These plants were first established in Georgia and then spread to South Carolina and are gradually filtering into other southern states.

Georgia

At the Clarkesville, Georgia, high school there are located a co-operative canning plant, a co-operative hatchery, a co-operative cold storage plant, and a freezer locker system. During the canning season there are 365 farm families that use the canning plant. Over 70,000 cans of fruits, vegetables, and meat are processed each season. This canning plant prevents fully 50 percent of this produce from being wasted each year. The co-operative hatchery incubates and broods thousands of baby chicks for the farmers at a very low cost. There are 214 farm families to cure 18,000 pounds of meat. In this way the farmers do not have to wait for a "cold snap" to slaughter their animals. The freezer locker system makes it possible for the farmers to have fresh fruits, vegetables, and meats the year round.

Mississippi

Now let's take a look at the co-operative in the Ellisville, Mississippi, school district. This school district has a farmers' co-operative that ginned 1,237 bales of cotton, bought 700 tons of fertilizer, 400 tons of cottonseed, and 300 tons of cottonseed meal.

At the Lake Vocational high school in Mississippi there has been organized the Lake Co-operative Association. This association has a total membership of 185 farmers, 180 of whom are evening-class members, and five members of a part-time class. They have a total investment of $16,750. The stockholders put in $3,250; $9,500 was borrowed from the Bank of Co-operatives, and $4,000 was borrowed from an oil mill. At the close of business in the fall of 1941, they had a profit of $2,200. They paid to the Bank of Co-operatives $1,000 and have on hand $1,590.

At Fulton, Mississippi, the local chapter of the Future Farmers of America has 130 farm boys as members. They have formed a dairy co-operative. They own five registered cows, 14 grade cows, one registered bull, and all the equipment necessary to operate this co-operative. they borrowed $2,500 from the Production Credit Association and with this they bought 24 registered Jersey heifers. The receipts from this farm boy co-operative amount to $350 per month.

At Caledonia, Mississippi, there are a number of co-operatives organized in connection with the vocational agriculture department of the consolidated school. There are a Dairy Herd Improvement Association, a Mule Production Association, a Seed Marketing Association, the F.F.A. Jersey Breeders Association, the F.F.A. Poland China pig chain, and the One Variety Cotton Improvement Association. This One Variety Cotton Improvement Association began in 1939 with 130 acres of cotton. The ginners set aside a special day for ginning the one variety cotton. The seed was saved and sold for planting. Today 90 percent of the land planted to cotton in the school district, totaling 6,000 acres, is planted to this one variety.

North Carolina

The state of North Carolina has submitted many examples of Community Co-operatives. I would like to give you a brief of some of the cases that have been called to my attention.

At Troy there is a Poultry Co-operative Marketing Association that started in 1924. Its members were at first evening-class members and farm boys in all-day classes in vocational agriculture. In 1927 the sales were $18,650. Eight thousand pounds of capons were sold to one hotel. This association has since spread to many communities and each has a small co-operative.

At Ansonville there has been formed a co-operative canning association. The canning plant has a capacity of 5,000 cans per day. Over 20,000 cans were put up in 1940.

The Rowland Produce Association was organized under the laws of North Carolina in the spring of 1940. It has 486 members. In 1940 it shipped $28,000 worth of green tomatoes and canned 7,500 cases of tomatoes. This association also ships cantaloupes, watermelons, potatoes, and paprika peppers. The members have contracted to grow 300 acres of peppers in 1942.

Virginia

I would like to have you visit with me the Randolph Young Farmers Co-operative, Inc., of Farmville, Virginia. This co-operative is chartered under the laws of Virginia. It has for its purpose "To Serve in Co-operation, Education, and Recreation." The members of this organization are made up of former stu-

Methods of Securing Community Co-operation

RALPH A. DIXON, Teacher, Claxton, Georgia

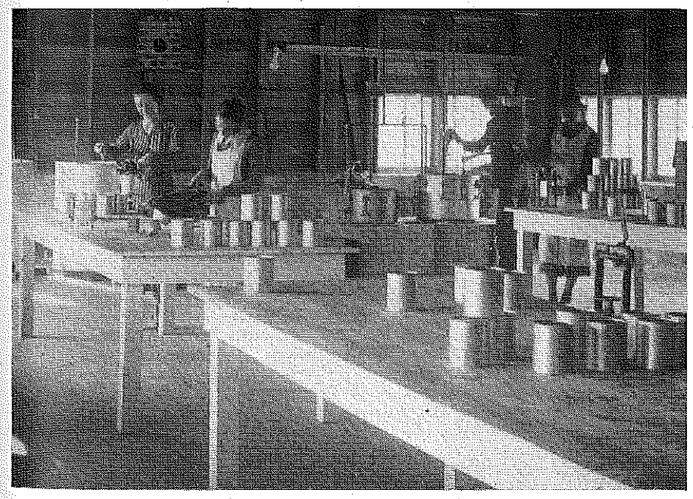
VOCATIONAL agriculture had its beginning in Evans County, in March, 1938. The department was located in the county high school and I was the first teacher. I felt that my first big problem was acquainting the public with the vocational program.

On the first Tuesday after I arrived I met with the county board and explained the aims and purposes of vocational agriculture and discussed with them some of the most needed projects of the county.

I began my work by making a survey of the county. I studied the people, the living conditions, the crops cultivated, and especially the amount of foods canned for home consumption.

Discovering Needs

After the survey I realized that few people were conserving the excess foods produced on their farms. At the next board meeting I presented these facts and showed the necessity of a community canning plant. After some discussion the board voted unanimously to build one, but I did not believe they realized how many of the families in the county would take advantage of this enterprise and was afraid the building they would erect then would be inadequate to take care of the future demands; so I suggested that we find an empty building to be used temporarily as a community canning plant. The only thing available at that time was an old covered freight platform sixty feet long and forty feet wide. This looked like a bad beginning, but we walled it up and put screens on all sides. We cleaned it thoroly and installed about $900.00 worth of equipment.



Community Canning Plant in Operation

Building a Program

While we were getting this building thruout with up-to-date new equipment.

The canning plant is large and conveniently arranged. We are able to put up about 7,000 cans per day, if necessary. During this season we have averaged putting up 1,500 to 2,000 cans per day and have served 245 families.

During the winter months we canned large quantities of meats for the farmers and expect to increase this amount many times this coming winter. It is our ambition now to install freezer-lockers in communities to encourage the farmers to use the canning plant.

The local paper co-operated by publishing news articles and editorials every week to encourage the conserving of excess farm products by using the community canning plant.

We began operation of the canning plant the first day of June. The response was quite gratifying. We canned, during the first year, 20,000 cans and served about 100 families. We operated the canning plant in this location for the next two years with a steady increase in number of cans and families served. The last year we canned 37,000 cans and 3,500 bottles of catsup and served 185 families.

The public now began to realize the value and importance of vocational agriculture and was anxious to improve our working conditions and equipment. As always, the county school superintendent and the county board co-operated willingly. Work was soon begun on a vocational building large enough to house a home economics and vocational agriculture department.

On January 1, 1941, we moved into this building which was constructed and equipped at a cost of $20,000. It consists of a workshop, two large classrooms, a kitchen, a combination living room and dining room, two offices, plenty of locker space, and a canning plant. It is furnished

will be another step toward preservation of foods and our live-at-home program.

The vocational work is directly connected with the Nutrition for Defense Committee in Evans County. The Steering committee meets monthly in the vocational building. At these meetings the committee considers various problems and plans community meetings to discuss these problems with the farm men and women.

Our goal at the present is to make every farm self-sustaining. To do this every family must realize the importance of making out a food budget and meeting it at home, first by producing the crops and then preserving them for future needs. The cannery is a dominant factor in food preservation.

Agriculture has been taught only three years in this county and there are already definite, far-reaching results from the program. We feel that this is only a beginning and are looking to the future for greater and more far-reaching benefits.

Fewer, Bigger Farms

FARMS in the United States decreased in number but increased in size during the last 10 years. Total land in farms is larger than in 1930. The agricultural census put the number of farms at 6,096,799 in 1940, as compared with 6,288,648 in 1930. The average size of farms was 174 acres in 1940, as contrasted with 157 acres in 1930. Total land in farms was 1,060,852,374 acres in 1940, as compared with 986,771,016 acres in 1930.

Farm population increased during the first half of the decade, then decreased; the total of 30,475,206 in 1940 compares with 30,445,350 in 1930. States having largest farm population include Texas (2,165,611 people in 1940), North Carolina (1,654,123), Mississippi (1,405,749), Georgia (1,369,719), Alabama (1,344,349), Tennessee (1,276,437). Other States having more than 1,000,000 of farm population include Ohio, Missouri, Kentucky, and Arkansas.

The number of full-owner farm operators increased during the decade (from 2,911,644 in 1930 to 3,084,138 in 1940), and the number of part-owners decreased (from 656,750 in 1930 to 615,099 in 1940). The number of tenants decreased from 2,664,365 in 1930 to 2,361,271 in 1940, a large part of this decrease being in the number of sharecroppers (from 776,278 sharecroppers in 1930 to 541,291 in 1940).

Sixty years ago, about 26 percent of all farms in the United States were operated by tenants. The proportion increased during the next 50 years; in 1930 about 42 percent of the farms were operated by tenants. In 1940, the census showed that about 39 percent of the farms were operated by tenants. Much of the decrease during the last decade was a change in the status of many sharecroppers in the South to "wage hands," "resident laborers," or regular farm laborers.

Census returns indicated there were 1,500,000 tractors on farms in 1940, as contrasted with 1,000,000 in 1930; that the total number of horses and mules, 27 months old and over, decreased from 17,611,905 to 13,028,863 during this 10-year period.

Supervised Practice

C. L. ANGERER

Supervised Practice in Farm Shop

W. R. TABB, Teacher Education,
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THIS article deals with supervised practice in farm shop, carried on, as is other supervised practice in vocational agriculture, largely on the home farms of all-day, part-time, and evening-school students.

W. R. Tabb

No phase of supervised practice is more important.

Need for Supervised Practice in Farm Shop

Supervised practice is as essential to attaining vocational proficiency in farm shop as it is in attaining proficiency in other phases of vocational agriculture.

1. Class time allotted to farm shop in vocational agriculture is not, alone, adequate to develop satisfactory vocational proficiency. If the needed proficiency is to be developed, time other than class time must be used.

2. Many valid farm-shop objectives can be reached only on the home farms of the students. Others can be only partly reached in the school shop. The following list of large farm-shop objectives should illustrate the necessity for home-farm practice.

Develop the ability and attitude necessary to:

a. Make managerial decisions about farm-shop work by deciding what needs to be done, when to do the work, whether to do the work or to hire it done, planning for getting the work done, and estimating costs.

b. Do in a workmanlike way the operative jobs the farmer finds desirable to perform on the farm.

c. Select and secure suitable materials for doing the work, such as lumber, hardware, paint and preservatives, and repair parts.

d. Supervise the work of others in doing farm-shop work.

e. Provide facilities for doing the farm-shop work at home by providing a suitable place to work and selecting and securing suitable tools and equipment for doing the work.

3. Many worth-while learning situations cannot be brought to the school shop. They must be utilized where they are if they are to be used.

4. Farm-shop work at school becomes academic unless what is learned in school is applied to the needs of the home farm. The primary learning objective of students in farm-shop classwork should be to learn what to do and how to do it outside of the class. Classwork in farm shop shop class would not justify the time. They must constitute learning experiences for the acquiring of abilities and attitudes needed in life—life as farmers live it.

5. Most farms have a great deal of shop work that needs to be done, much more than can be brought to the school shop. Only a small part of such work can be brought to the shop. A great deal of farm-shop practice must be done on the farm.

Kinds of Supervised Practice in Farm Shop

Supervised practice in farm shop lends itself to *improvement projects* and to *supplementary practice* as these terms are generally used. However, farm-shop work may be an important part of a productive enterprise project—as building a brooder house in connection with a productive enterprise project in poultry.

Supervised practice can be carried on thru both improvement projects and supplementary practice in all of the major divisions of farm-shop work. The following are illustrations:

Supervising the Practice

As in other phases of vocational agriculture, supervised practice in farm shop is perhaps the teacher's best instrument of teaching. One learns what he practices. It is on the home farm that opportunities for practice exist and where most farm-shop practice must take place. Teaching is guiding the learning process. If efficient learning is to take place, the practice must be guided. It is impossible for the teacher to give personal supervision to all the practice of all the students. The teacher may do some of the following things in supervising the practice of students at home:

1. Guide the students in choosing their supervised practice in farm shop.

The teacher's objectives should be to teach the students to make important managerial decisions, such as deciding what farm shop work needs to be done at home and deciding whether to do the work or to hire it done. His objective should also include getting good supervised practice in the farm shop.

To reach these objectives, the teacher must know what farm-shop work needs to be done on the home farm, and he must have a good concept of what constitutes good supervised practice. Likewise, if students are to learn to make decisions, they can learn to do so only by making decisions. Each student should have opportunity to think, and guidance in thinking thru what needs to be done. Prepared survey forms often get in the way of good thinking. Survey forms may constitute good teaching techniques if the students make or help make the forms.

(Continued on page 198)

Division	Improvement Project	Supplementary Practice
1. Carpentry	Building machinery shed	Installing dropping board and roosts
2. Small-tool maintenance	Cleaning, sharpening, and replacing handles of small tools on the farm	Fitting timber saw
3. Farm machinery repair	Overhauling and repairing the farm machinery	Replacing tongue in corn planter
4. Plumbing	Installing home water system	Repairing pitcher pump
5. Electricity	Wiring outbuildings for lights	Installing time clock in poultry house
6. Concrete and masonry	Building stock water tank	Patching plastering in kitchen
7. Painting and finishing	Painting the farmhouse	Whitewashing yard fence
8. Leather and rope work	Cleaning, oiling, and repairing the farm harness	Splicing hay-fork rope
9. Farm motors	Operating and servicing tractor thru the summer	Changing oil in the family car
10. Fencing	Fencing a field	Building and hanging a gate
11. Land engineering	Tile-draining a field	Measuring tobacco field
12. General	Building and equipping home farm shop	Building a workbench

Young-Farmer Class Stresses Supervised Farming Activities

W. W. McCULLOCH, Teacher, Lexington, North Carolina

THE Arcadia Young Men's Vocational Club of Davidson County, North Carolina, holds bi-monthly meetings in the agricultural building of the local high school to discuss better farming methods and to actually work on construction and repair jobs arising on their home farms.

The 18 members of the club have been active in supervised practice work on their home farms. During the year the boys had full responsibility for and complete ownership of 14 acres of corn, 13 acres of tobacco, 12 acres of truck crops, 18 acres of sweet potatoes, and 35 hogs.

Production Practices Are Improved

In the production of these enterprises the club members adopted many of the new practices discussed in their regular monthly meetings. Hence these enterprises were conducted according to the recommendations of the state experiment station. In addition to these individual projects the young men grew on a partnership basis, 238 acres of crops, 173 head of livestock, and 1,540 chickens.

The young men were responsible for the adoption of 73 new improved production practices in their productive projects. These new practices included better methods of fertilization, approved practices of insect and disease control, and correct feeding and management of livestock and poultry. The boys also held two field demonstrations, one in pruning fruit trees and one in terracing. As a result of these demonstrations five home orchards were pruned and 56 acres of land terraced.

Shop Activities Are Popular

One night each month the facilities of the agriculture department shop are made available to the club members. During these shop meetings the boys sharpen tools, repair farm tools and equipment, and construct farm and home appliances. During the past year a total of 93 jobs has been completed by club members under the supervision of the teacher of agriculture. Among the shop jobs completed there were 44 tools sharpened, eight self-feeders constructed, 14 windows screened, and 18 plows and other farm tools repaired.

Club members are urged to make use of the school shop whenever a shop job arises that the home farm is not equipped to do. On days not suitable for farm work six to eight members of the part-time class can usually be found at work in the school shop repairing and constructing farm equipment.

This North Carolina Young-Farmer Class includes various shop activities in its program

Community Co-operatives*

(Continued from page 186)

dents of vocational agriculture who are now enrolled in part-time classes. The organization was perfected in November, 1937, with 70 members. Only members are serviced thru this association. They buy at a discount fertilizers, feed, electric refrigerators, washing machines, radios, stoves, farm machinery, fencing wire, roofing, nails, automobile tires, water pumps, and any other article that is needed for the farm and the farm home. This association has built for its members 40 miles of rural electrification lines and 16 miles of duplex telephone lines. To give you some idea of the size of the business these young men bought $6,000 worth of feed and 250 tons of fertilizer in 1939, and this year one order of seed amounted to 8,000 pounds.

The Worsham, Virginia, Farmers Co-operative was organized in 1939 by the studying vocational agriculture. The sole purpose of this co-operative was to grind and mix home-grown feeds. There was subscribed $375, and $200 was borrowed for the purpose of providing hammer mill, gasoline motor, and erecting a building. More than 100 farmers use this co-operative, grinding and mixing their own poultry, hog, and dairy feed. In November of this year the members ground more than 40,000 pounds of feed.

Tennessee

In Tennessee there are two F.F.A. co-operatives that deserve mention. At Dyer, the local chapter has purchased 14 acres of land on which it grows cotton for supplying seed to the chapter members and farmers of the community. Seed from cotton grown on the experiment station is planted on the land owned by the chapter. They get first choice of the seed produced and they sell the seed from the to the farmers of the community. This assures a constant upgrading of the cotton each year.

The Whitehaven chapter of the F.F.A. took $200 that they had and started a loan fund to finance the projects of their chapter members. With the notes supported by proper collateral they borrowed more money to be used for the same purpose. In this way their small capital went much further in helping boys who need money.

Texas

In Texas, Mr. Charles D. Parker, Supervisor of Area 10, advises me that about 95 percent of the departments of vocational agriculture in his district have co-operatives but are not set up as such under the law. Mr. O. A. Gerloff, teacher of vocational agriculture at Moody, has a most interesting co-operative among his part-time young farmers. They buy their cattle and hogs together; they mix their feed together; and they sell their livestock together. They carry their own insurance against loss from any cause. At first they borrowed money thru the Production Credit Association, but the local banker made the young men as good a proposition so now they deal with him. They do about $7,000 worth of feed business a year.

Arkansas

Arkansas is full of small co-operatives that are sponsored by the teachers of vocational agriculture. At Charleston the Co-operative Seed Cleaners Association cleaned 15,000 pounds of small grain; the Greenwood Co-operative Seed Purchasers Association bought 186,000 pounds of lespedeza seed; and at Lavoca the Co-operative Production and Marketing Red Raspberry Association bought 100,000 new plants in 1941.

Louisiana

At Dubach High School of the Lincoln parish in Louisiana, the vocational agriculture teacher organized a co-operative for farmers that purchased 100,000 pounds of improved cottonseed, and saved them a third.

South Carolina

In South Carolina practically all the community co-operatives are set up and chartered according to the state law. The Jordan Community co-operative serves 345 farm families. It does a gross business of $25,000 each year. Last year it bought 160 tons of fertilizer; 150 tons of feed;

J. B. McCLELLAND Farmer Classes W. H. MARTIN

Before and After

C. J. CUNNINGHAM, Instructor, Hedgesville, West Virginia

EVENING schools are conducted primarily for the purpose of helping farmers to solve their problems. It is important to all of us as teachers of agriculture that we not lose sight of this purpose, we must constantly be aware that the evening school is a part of our job in teaching agriculture.

It has often been said that our first job is to discover the needs of the farmers. But there are good and poor ways of doing this. Too often the instructors depend on the farmers to bring their problems to them rather than going out among them and trying to discover their problems. Many of our farmers are too busy, or have not given sufficient thought to be able clearly to state their major problems. Many of these farmers when asked what their problems are may mention only their minor problems and are apt to overlook the most important ones.

Will Farmers Report Their Real Needs?

I believe it is our job to help the farmers to discover their needs and problems in our evening classes thru guidance in setting up their course of study. Often it is too late to discover their problems after the classes have started. It is necessary for the instructor to visit the farmers and really study their farming program before an evening school is undertaken.

As a beginning teacher I was more interested in making a good impression upon the supervisory staff than I was of rendering service to my community. With this in mind I attempted an evening school three months after accepting the job. My community carries on a very different type of farming from the one in which I received my farming experience. Therefore, I knew nothing of the needs of the community, the type of soil, or the many other factors that the instructor must know before he can be successful in teaching an adult class. Yet, without preparation, I blundered blindly into an evening school.

After visiting a few of the key farmers of the community a meeting was called for the purpose of organization. Sixteen farmers responded to this call. Much of the first meeting was devoted to explaining the purpose of the evening school and trying to set up problems for discussion at the later meetings. The farmers were asked to present their problems and without question the instructor accepted them as the problems for the course to be taken up during that series of meetings.

After a few meetings, the instructor fully realized that the problems presented by the farmers were not their real problems. Attendance dropped and interest lagged until by the end of the 12 meetings there were only 10 faithful farmers who what they were learning but out of respect for the instructor.

Kind of Information Needed

By the time the series of meetings ended the instructor felt that he knew some of the farmers well enough to talk to them in a very personal way regarding the evening school work. The members admitted that the problems they raised were not really their main problems at all but that there were more important ones which we should have taken up.

With this valuable experience back of me I was determined to get all the information and advice that I could and to make a success of my adult-class work the next year.

During the summer the leading businessmen, farmers, and the county agent were visited by the instructor. After much discussion some far-reaching objectives were set up. Orcharding was one of the leading enterprises and this was failing very rapidly. The orchard help, who were mainly part-time farmers, were faced with a problem of making enough money to keep their families. Many of them were forced to go on governmental relief while others tried to make ends meet on the poor, unproductive orchards. The soils of many of these orchards were very unproductive, and much erosion had taken place.

How We Started From Where Farmers Are

After these facts were studied the instructor was fully aware that the main problem was not that of knowing how to raise more and better corn to the acre but was one of making enough money to keep the families from starvation or governmental relief. It was a challenge to the instructor to help these farmers to find a solution to this problem. After getting the advice of the county agent and other successful men in the community it was decided that poultry would come nearer to meeting this need than any other enterprise. There were only a few farm flocks in the community and these were very poorly cared for. Many of the farmers did not have sufficient funds to build modern poultry houses. With these men it was a case of trying to do the best possible with what they had.

After the instructor had visited every prospective member, had talked with him about his personal problems, and had aroused in him interest in an adult class, we started our second series of meetings.

At the first meeting the instructor lead a discussion on the general conditions in the community and presented data to support his statements. This discussion lead the men to realize that they did have some real problems and that there discussion the group decided that the solution to the existing condition could be found by increasing their cash income thru poultry and small-fruit production, and then after their income had been increased, to start building up the fertility of the soil.

Instruction Accompanied by Close Supervision

A series of 15 meetings was devoted to poultry raising. When we had concluded these meetings there were 16 new poultry farmers in the community. These men required close and careful supervision on the part of the instructor. This number has grown until today this community is considered the best poultry producing section in the county. These farmers are using superior practices and are very successful in poultry production.

The third series of meetings was devoted to soil improvement. This was a long and hard task for the instructor. One of the greatest needs was that of conserving the soil and checking erosion. After the class had spent considerable time on methods of improving the soil and on checking erosion, some new practices were recommended. For the first time the farmer learned of strip and contour farming. At first only three men undertook to carry out strip and contour farming. These men were watched very closely by their neighbors to see what results were obtained.

The instructor laid out the strips and helped to get these started on three farms but soon found that there were so many requests for him that he could not continue this practice. With the help and influence of the county agent and leading farmers we were able to get a soil conservation camp located in the community. This is the third year of the soil conservation work and the first year of the soil conservation camp. There are 75 farmers in the community who have signed up for the soil conservation work with the government.

Six Years Later

With the lapse of six years it gives the instructor great pleasure to look over the community and compare it with that of six years ago. Many of the old, worn out orchards have been cut down and seeded to grass or legumes. Old poultry houses have been replaced by new ones, unproductive flocks are productive, some of the old packing sheds converted into livestock barns and the hills which were once full of gullies have been corrected by good farming practices and the farmers own and control a lime kiln which is now under construction. I feel that placing of emphasis on real farmer needs has been fully justified.

Agriculture is beneficial to a state in proportion as its labors are encouraged, enlightened, and honored—for in that proportion does it add to national and

Co-operative Activities for Young-Farmer Classes

J. GORDON CANTERBURY, Jr., Teacher, Covington, Louisiana

THE title of this article should catch the eye of every teacher of agriculture who has a part-time class or who is planning such a class. I believe that those who have had experience in this type of instruction will agree that co-operative activities or co-operative action is the key that opens the door to truly successful part-time classes.

The present national emergency provides an opportunity for part-time classes to perform a real community, state, and national service. It is quite likely that a greater educational effort should be expended on the out-of-school group, during this emergency because approximately four-fifths of these farm youths come from farms where they are actually engaged in farming either as part-time or full-time workers.

Since increased production is being asked by the United States Department of Agriculture on such commodities as poultry products, dairy and beef products, swine and vegetables, why not prepare our part-time course to include one or more of these things?

Why not begin our class by selecting a theme for the course? "Better Living from Home Food Production" is one suggestion. Other themes may be "Efficiency in Increasing Production," "Producing Food for Freedom," "Putting the Live-at-Home Program to Work." These are general themes covering more than one subject. If a course is based on one enterprise, the theme should be narrowed down to conform to the particular enterprise. The theme should give in a general idea the goal we are striving to attain.

After we have our theme, let us consider possible activities for members of the group. Keep in mind that these young men look for action. They wish to work with their hands. They are after something new.

Poultry production offers excellent opportunities for co-operative action from incubation to marketing. If the class is sufficiently interested in poultry, it would be well to consider this enterprise alone for one full course.

Eggs Are Hatched Co-operatively

Incubation, or chick hatching, is a co-operative activity that offers a great deal of interesting action. It is not necessary to buy a fancy incubator to begin this project. After discussing incubation problems with our part-time boys, we found that three boys had small, farm-type incubators at home that were not in use. Two other boys knew where they could each borrow one. None of the incubators was over 150-egg capacity; all of them used kerosene lamps as the source of heat. The incubators were dismantled and carefully checked. Here the class learned the principle of incubator construction. From the class a hatcheryman was selected who had a great deal of experience with this type of incubator. He agreed to care for the incubators, furnishing the kerosene and labor for two cents per egg. The members secured their own machines.

Co-operatively constructing electric and kerosene-lamp brooders for class members is another interesting activity in poultry production. Practically all boys of part-time age like to work with a hammer and saw. In connection with the constructing of brooders, the boys might put some of their own ideas to work in building grain bins, watering devices, egg cases, catching hooks, feed hoppers, etc. Wooden boxes may be secured from merchants, and other scrap material may be used. Class members will bring hammers, saws, etc., from home as they are needed.

Each class probably will have one or two members who will wish to construct a brooder house, range shelter, laying house, or some other poultry building. This is a real opportunity for co-operative action and for teaching correct housing and equipment. The members may draw plans, discuss each, and decide on the ones to be used. In regard to housing, have you tried the temporary sack-cement house? If you live in the South a house, 10′ x 12′, may be constructed at a cost probably not exceeding $5, depending on the amount of scrap material available. The house may be used as a brooder, growing, or laying house. It is windproof and waterproof and should last three years before repairs are needed. Burlap sacks are tacked to a frame of poles and painted inside and outside with a mixture containing 12 pounds of cement, two pounds of lime, one pound of salt, one-half pound of powdered alum, and five quarts of water.

We cannot overlook the importance of a co-operative buying and selling association formed within the part-time class. Last year our class purchased feed, supplements, and minerals for cash and on terms. Mixing of feed and minerals was carried out. Broilers, capons, eggs, and cull hens were sold locally. Birds were dressed if so desired by the customer. Eggs were sold in special printed cartons. Advertisements were placed in the local paper when customers could not readily be found.

Hot-bed and coldframe construction and management are other co-operative activities which offer interesting possibilities. Schools having hot lunch programs will probably be eager to finance these projects in order to secure plants for the school garden. Our part-time class this year plans to construct a hotbed and coldframe at school and also to supervise the planting of a school garden, which is to be maintained by the seventh-grade boys in the day-unit class.

At the present time the government, in encouraging increased production, is offering great opportunities for co-operative action thru all vocational-agriculture groups. Feed grinders, separators, incubators, cold storage lockers, etc., can be secured at cost. Feed and fertilizer mixing plants, establishing milk and cream routes, chick hatching, and supplying fresh meats and vegetables thruout the year for farmers are only a few co-operative actions possible.

We, the teachers of agriculture, are in a wonderful position to serve our country now, and at the same time leave our communities on a sound, secure, and practical basis after the emergency is over. Let us begin that service right in our part-time classes. Let us so plan our programs of action that they will create and maintain interest within our class.

Co-ordinating the Regular Young-Farmer Classes With the Defense Class Program

THOMAS DUBOISE, Teacher, Craven County Farm Life School, Vanceboro, North Carolina

THE national emergency with the changes in the emphasis placed on different phases of agriculture has offered a new opportunity for the agricultural teacher in his work with young-farmer classes. This opportunity falls in two distinct fields. One field is that of agricultural production and the other is the field of farm mechanics.

Since the farmers of the nation are now being asked to increase the production of certain commodities as a defense measure, the teacher of agriculture can render a real service to defense and also to the members of his young-farmer classes by giving systematic instruction in the various enterprises in which these young farmers need further instruction.

Here in the South we are being asked to increase production of small grains, hogs, dairy products, and poultry. In many sections these enterprises have not been of much importance and therefore have not been stressed in high school classes. Now that national defense has made these products important, how to produce them most efficiently becomes a teacher of agriculture has a rare opportunity to help solve these problems in young-farmer classes and thereby contribute to the defense program.

Farm Mechanics Provides Opportunities for Co-ordinating

Farm mechanics lends itself directly to co-ordination with the defense work. If this phase of vocational education in agriculture had received the attention that was due it in the past, there would be less need now for defense training in this field. At present, however, just from the standpoint of good educational practice, we are forced to give a prominent place to this phase of work in our young farmer classes. With the nation engaged in a major war we are faced with the necessity of making all of our farm equipment and buildings render the utmost service, and to do this the men on the farm must know how to keep them in repair. If there was ever any justification for the farmer's hiring all this work done, there certainly isn't at the present time.

Farm Mechanics

L. B. POLLOM

Housing and Equipping the Shop for Farm Mechanics

A. C. KENNEDY, Department of Agricultural Engineering,
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A. C. Kennedy

FARM buildings and equipment represent over one-half of the farm investment. In Ohio our building and equipment investment is appraised at 40 million dollars more than the land itself. It seems logical then, that we should give serious consideration to the maintenance and repair of our buildings and equipment.

A well-equipped shop should be provided on every farm. Every farmer should be skilled in mechanics if he is to make a success of his business. Farmers are using up-to-date machines in sowing and in harvesting their crops; the labor-saving qualities of those machines are recognized and appreciated. In order to care for and repair that machinery we must have the necessary tools and a suitable place for doing the work. The farmer of today is doing the best he can to meet the situation. The future farmer must be trained to meet these needs.

Farm Needs Determine Shop Equipment to be Used

In considering the building facilities and equipment desirable for teaching farm mechanics to farm boys and farmers, it is obvious that we should determine the present and future needs of these boys and men for an understanding of and an ability to do this kind of work. We must be conscious of our teaching objectives when planning physical devices to be used as aids for that teaching.

We must determine the mechanical needs of the boy and the farm and use these needs as a basis for our course in mechanics. In finding the shop needs we should start with the needs of the home farm. It often takes more tact than the boy is willing to use to persuade Dad, who has a multitude of things to devote his attention to, that he should turn a job over to the boy and in many cases finance it for him. In a similar way the teacher can help the boy and his Dad recognize jobs that can be done in the shop to the mutual benefit of all concerned.

Now, if we have gained the confidence of Dad and have his support and co-operation, we should next consider the needs of the farm home. I have found that almost every mother and housewife has a bit of trade of her own and would learned to use them because of necessity in doing necessary repair work around the house. The need for household repair exists in every home. It is a challenge to every farm-shop teacher to meet that need by teaching the boy so that he will do some of this work.

Home Shop Is Essential

If the farm boy, with the assistance and guidance of the farm-shop teacher, is going to do much toward doing the repair and construction work on the farm and in the home it is certainly apparent that the farm is going to need a home shop. The teacher should encourage and guide the boy in developing a work shop, with as much of the needed equipment as it is possible to have, of his own. This home shop and its needs provide many problems and jobs that will need to be worked out in the school shop.

Another important source for determining the needs of the farm shop is the boy's needs as related to his individual farming program. The boy's current and continuous projects and his other supervised practice program present numerous needs that can be taken care of in the farm shop. For example, a boy who has 100 laying hens for his project in animal husbandry will need to be able to do repairs and construction work on his house and equipment. He may want to cull the present flock; this would present the need of a catching crate. He may want to build some mash feeders, waterers, or nest racks, or to improve the roosts. It may be that some of the glass in the windows is broken and needs to be replaced, or there may be a leak in the roof that needs to be repaired. He may be starting with a new flock or increasing the size of the old one and will need a brooder house.

If the farm-shop room, equipment, and facilities are adequate to meet these needs it will meet the needs of the group of young men who are out of school and who may want to come in and do work in the shop in connection with their part-time work. It should also meet the needs of the adult-farmer class.

I have taken considerable time in discusing the needs upon which the farm-shop course is based. These needs are the determining factors upon which we must base our needs for a suitable building and suitable equipment if we are to meet the recognized objective of the farm-mechanics work in connection with our work in vocational agriculture. A shop room providing a suitable place located in suitable surroundings supplied with must be provided if we are to meet these needs of our rural people in our rural and small village schools. I know of no better, in fact, of no other logical or psychological, workable basis for determining the needs of building facilities and equipment for farm-mechanics work.

Therefore, based on these needs, we find the room and equipment varies according to the number enrolled in all-day classes in farm shop, the number of young men and adult farmers that will take advantage of the shop opportunities, and the type and extent of farming in the community.

Location of Shop

Shop room may be provided in one of four locations. It may be in the basement floor of the main high-school building. Usually this means the room will be small. A shop room should contain 50 square feet per pupil as a minimum and 75 square feet per pupil is much more desirable. Often this location is objectionable because of the interference of the shop noises with other class work. If located under the auditorium or gymnasium this objection may be overcome. Poor light is usually obtained in this location.

Many of our schools are locating the shop in an addition to the main building. This is proving very satisfactory. It makes shop work a definite unit of the school system. The shop is convenient and easily accessible when so located.

Another possibility is the separate building for the agricultural classroom and the farm-shop room. As far as room and interference of the noise is concerned this is an ideal setup. However it does give somewhat of an isolated situation to the work as a separate department. The cost of construction of a separate building is greater than that of an addition if each are constructed of equal quality material.

Another type of shop is the separate building for the shop work alone. Adequate light and other desirable features can be readily obtained in this type, but the fact that it is set apart from the school building proper is not so desirable, and this presents a more difficult heating problem. The construction of these buildings varies from the frame school house that has been moved in from some township in the district, to the brick structure. We have buildings in Ohio that cost as low as $200 and we have several additions for vocational work that cost around $40,000. Whatever the type of building, it should be well lighted. It should have

feet of floor space. It should have double doors at least 9′ x 9′, thru which machinery can be taken for repair work. The folding, overhead door is most satisfactory. The part of the floor on which the machinery is to be repaired should be concrete and the rest of the floor should be of wood construction.

The shop room should have an adequate heating system. The individual stove in the room is least desirable and a connection to the main heating system is most desirable.

Facilities should be provided for seating the shop students during demonstrations.

Work Benches

The farm shop should be equipped with enough work benches* that every boy can have a bench. This bench should be at least 22 inches wide and 5 feet long and should have a woodworking vise. A desirable location for these benches is along the wall, facing the windows. At least one good-sized, metal-working bench should be placed in the machinery working area of the shop. If electrical conveniences are provided at the wood-working benches it is not necessary to have a separate bench for electrical work. The sheet-metal and pipe-fitting work can be done on the metal-working benches. In some large departments it may be necessary to use separate benches for each type of work. Departmentalizing the farm-shop work is questionable. The needs on the farm in this way are not encountered in "departments." Farm mechanics should be an integrated part of our agricultural program. We have lists of recommended tools available. It should not be necessary to discuss here the hand tools that should be supplied hammer, a plane, a ruler, and a trisquare.

Tool Storage

There are three major methods of storing tools in the farm shop. If the tools are used by both the industrial arts students and the farm-shop boys, the tool room, with a checking system may be necessary. For farm-shop work the tools may be kept in small tool cabinets* or mounted on a tool board.* The tool board may be of two types—the open and the closed. If it is necessary to keep the tools in a case that can be locked, the closed tool board is satisfactory. All of the general, hand tools can be mounted on this board and the front closed down and locked. If wall space is scarce, as it is in most of our shops, the front cover of the tool board can be painted with blackboard paint and used as a blackboard. Every shop room should have some blackboard space, altho it need not be very large.

The kinds, number, and sizes of power equipment will vary according to the needs of the work of that community. Many farm shops will need very little power equipment. Every shop should have a good power-driven tool grinder. An electric drill is very desirable. A good one can be obtained by adding a motor to a post drill. Next in order, perhaps would come the combination cross-cut and rip saw. The jointer would come next and then the bandsaw. A wood lathe has some occasional uses in the farm shop. The power tools should probably not be used until the boys have become fairly well skilled in the use of the hand tools. When selecting power equipment it is essential that it be large enough to do the job. It is also important that good

Other Equipment Needed

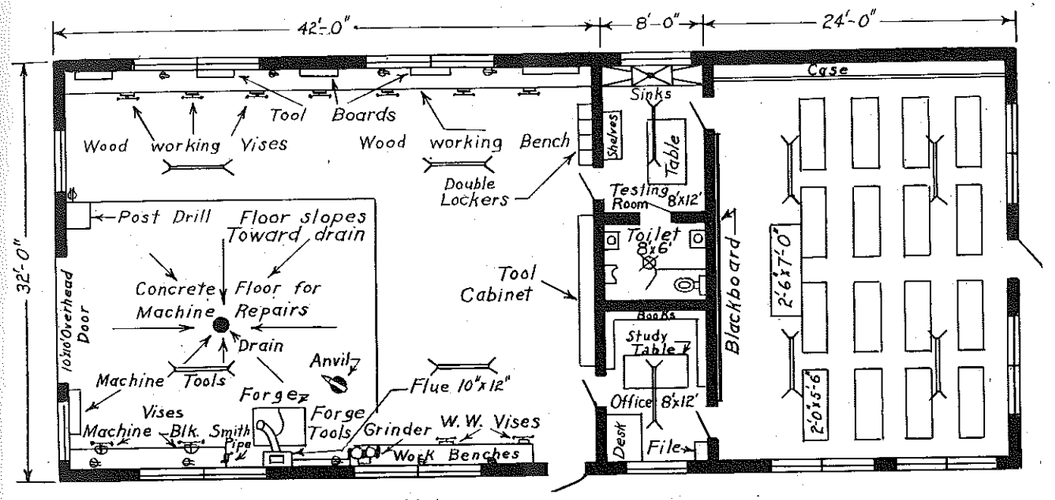
The shop should also have a forge and an anvil. The forge has a great many uses altho teaching of welding as a general farm shop practice is open to question. The small electric welder may have a place in some shops but we must keep in mind in our shop work that we are not training tradesmen. If we adhere to the needs as we meet them on the farm in community, we will have enough jobs along the line of care and repair, with some new construction, without getting into any work that should be done by skilled specialists.

Every shop should have at a convenient location a good first-aid kit. Our shop room, and all of its facilities, should be designed with safety uppermost in mind, but the first-aid kit must be on the job when needed. The shop should have a sink, wash bowl, and in some cases, toilet facilities. We should make some provision for the storage of clothing. Racks or other definite spaces should be provided for storing small projects while they are under construction.

Each individual must use his own judgment in determining whether to attempt the more difficult jobs himself or to hire them done; but in the case of the more ordinary repair and construction jobs there is little choice. The farmer must do these jobs himself or they will not be done. It is our job as vocational teachers to train him for this work. It is the job of the board of education to provide suitable room facilities and equipment for this training.

*These plans, in mimeographed form, may be obtained from Mr. Kennedy.

FLOOR PLAN FOR VOCATIONAL AGRICULTURAL BUILDING



1. Fluorescent lighting may be used for all artificial light.
2. The proportion of natural light in each room is approximately 1:5.
3. Storage space may be provided above class room.
4. Power equipment may be located in open area of floor space. Drop cords may be used as a source of current.
5. Locker should be double in height.
6. A plan for the enclosed tool cabinet may be obtained from the Agricultural Engineering Department, The Ohio State University.
7. Heat may be provided from main building, basement, furnace, or furnace in shop. Small gas heaters should also be available in each room.

The only adequate training for occupations is training thru occupations.—John

Studies and Investigations

C. S. ANDERSON

Current Activities in Disseminating Information Concerning Research

R. M. STEWART, Teacher Education, Ithaca, New York

R. M. Stewart

MEN do not solve their problems on the basis of ignorance. They must find out the facts. Farmers, teachers of farmers, supervisors, and educators of teachers solve their problems efficiently on the basis of accurate and adequate knowledge. You, as leaders in agricultural education, sometimes act with slight knowledge, perhaps, but you have the sense to profit by your experience and to discover the sources of difficulty in your practice. You do this by the application of whatever knowledge you have or whatever you can obtain to the situation and direct your subsequent performance accordingly. This is good sense for growth and development.

If I should define research as the process of finding out the facts relative to performance, of assigning values to performance or of making additions to the sum total of knowledge, (some of which may be very valuable) and assigning values to that addition of knowledge, I think that I shouldn't be far from a practical definition of what we mean by research. There are many ways of discovering the facts and ways of treating them.

As chairman of the research committee of the Agricultural Section, I have been particularly concerned that our research receive its proper place in the programs of supervision, teacher preparation, and teaching. A good teacher as well as a good supervisor or a good teacher educator, among other things, does make his work realistic and practical by learning constantly new things about it. This section of the A.V.A. has been unusually considerate of research for a number of years. The setting aside of a special period for the consideration of studies is particularly significant in many ways. The problems of our working areas are brought out in relief, where we can see what the outcomes have been.

Results of the First Publication

In 1935, Bulletin No. 180 was published. Tho it has not come to the attention of students in preparation for teaching as much as it should have, the results are gratifying, if I may guess on the basis of your responses. The committee's attention has been concerned with collecting, classifying, and distributing studies for several years.

The second volume of 384 studies. These, added to Bulletin No. 180, make a total of 757 agricultural studies that apply for the most part, either directly or indirectly, to public secondary education. It is as complete as the committee has been able to make it. Most of the studies are theses that were made by advanced students in connection with meeting the requirements of the several colleges and universities for advanced degrees. There are also other studies, the significance of which rests, perhaps, in the original data that have been accumulated to solve problems. We have not included in the summaries for the most part, studies that have been distributed otherwise. In the new volume, such studies of this type as have been included are identified as "non-thesis" in the heading.

In the process of discovering, making the summaries, classifying, and editing, certain observations may be made, suggestive of the character of the research as made by these advanced students. The spread of research is evident and its wide acceptance as essential to professional progress has been gratifying. There is evidence also that Bulletin No. 180 has stimulated many to make repetitive studies. This is essential to the progress of agricultural education. It gives corroboration or constructive criticism to the various factors of our programs. This is as wholesome for professional improvement as it is necessary for the progress of our cause.

Perhaps equally significant, or more, is the extension of research studies into pioneer areas, the attack upon new types of problems. The appointment of special research workers in many states is a very promising development. It is hoped that the *new* volume will stimulate you to look for these new areas of research and to project yourselves even beyond these. One should recognize particularly the lively attack that has been made in what we regard as pioneering problems. This program today is one emphasis of that fact. Tho there may be many studies listed that will make little contribution to the larger problems of our profession, the professional spirit involved is refreshing, and becomes the assurance of our hopes.

Many Earlier Studies Brought to Light

It was found that many of the earlier studies for the period 1917 to 1935 had not been located nor turned to the committee. We promised you that in the second volume we would make another attempt to recognize such studies. We have kept our promise. In this new volume there are 108 such studies. These have been included as a separate list following the 1940. These make up the summaries. In the revised and classified index, the total of 757 studies, including the studies printed in Bulletin No. 180 are classified under 27 major heads. Under most of these there are subheads. In brief, the index has been designed to make it easy for those who use the volume to follow clearly the progress of agricultural education on the secondary level.

In general, the limitations of the earlier summaries apply also to this volume. The restriction of the period of time to six years instead of 18 and the improvement in the organization of the committee, based upon our earlier experience, were two helpful factors effecting certain efficiencies. The committee still lacks adequate funds to facilitate this type of work. Some assistance was asked of the American Vocational Association for the preparation of the summaries for printing, including clerical and technical services and materials, and by a special additional request for sufficient funds to make the preparation and distribution of a mimeographed bibliography of these studies in advance of the complete summaries. These requests were granted. We appreciated this recognition very much.

The bibliography has been sent out under date of April, 1941. I should tell you, however, that in no case were any of these funds used for the services of the chairman, his secretary, or the N.Y.A. workers attached to the department of agricultural education. It did apply, however, to technical and clerical services involved in the preparation of the cumulative index and for the clerical services of copying the manuscript for the U.S. Office of Education. In this connection, I wish to make a record here of my appreciation for the co-operative aid of the Department of Rural Education, at Cornell University, without whose generosity the chairman would not have been able either to collect or prepare the studies for publication.

Membership of the Committee

At this point I wish to recognize the committee. For the four regions, the representatives are: North Atlantic, C. S. Anderson of Pennsylvania; North Central, H. M. Hamlin of Illinois; Southern, R. A. Davenport of Louisiana; Western Region, H. E. Lattig of Idaho; at large, Carsie Hammonds of Kentucky, and R. M. Stewart of New York; and ex-officio, Office of Education, F. W. Lathrop of the District of Columbia. In addition to these members, I should like to recognize J. T. Wheeler of Georgia and Sherman Dickinson of Missouri, former members of the committee when the plans for the new volume of studies were being made and launched, the former a member at large, and the latter the representative of the North Central Region.

I should be remiss too, if I did not give special credit to W. A. Smith of our own staff at Cornell University, who by regional-conference action became the representative's absence in Hawaii and for a period thereafter. He was responsible for collecting the studies from that area. In addition to these, there are the representatives of the states and territories who, acting under the general direction of the regional representatives, assumed the responsibilities within the several states and territories for the collection of the studies. Tho it was necessary to seek supplementary information from these representatives from time to time, the co-operation in this respect was splendid. In behalf of the Committee, I say, "Thank you, to all who helped in any way."

Tho it is sometimes a difficult task to secure full information concerning studies and then to whip it into proper form, to correct errors, to abbreviate the studies to designated length, there follows the stimulating pleasure of completing such a task. I hope the volume will not be long delayed in the press. Our own reactions to that question will determine pretty largely how long it will be. Personally, I think it is important enough to our programs to warrant our pressing a little on early publication if that appears to be necessary.

*Report of the Chairman of the Research Committee Agricultural Section, American Vocational Association, Boston, Massachusetts, December 10, 1941, 1:30 p.m.—Hotel Bradford.

Agricultural Planning For Defense

(Continued from page 185)

Educational Job Comes First

The educational job comes first. Every farm family in the country ought to know what is stirring with reference to the whole field of planning, not only with reference to the 1942 goals but also the probable demands for 1943 and 1944 and the fact that a serious beginning is being made to plan for the post-war world.

No doubt most meetings for developing plans will be held in the rural schools, since the local school is the nerve center for community discussion and action.

After the preliminary education spadework is done, each farm community can then proceed to the formulation of practical measures.

I cannot lay before you any finished blueprint. None has been nor will be prepared until farm folk have made their suggestions.

There is a feeling in the department that careful study should be given to all the needs of our rural people and that concrete suggestions be developed for meeting these needs.

Need for Better Rural Housing

An example of a particular field that needs to be investigated is that of providing adequate services and facilities needed by farm people.

High on the list in this field is the imperative need for better rural housing. At least one million farm houses were in urgent need of replacement in 1940. On the basis of a modest level of decent housing, the need for new farm houses might be two or three million instead of

The situation in this field is still deplorable after seven years of remedial measures taken largely by the WPA, the Farm Security Administration, and other government agencies. The 1940 census reports indicate how serious are the shortcomings in the equipment and conveniences of the average farm home.

Let me cite you just a few examples: In North Dakota some 65,000 farm homes out of 77,000 reported no electric lights, while 71,000 had no running water. In Mississippi 300,000 out of 328,000 had no electric lighting and 306,000 no running water. Just to the north of us, up in New Hampshire, where the level of farm housing is generally high, more than a third of the farm dwellings had no electric lighting and no running water.

Obviously, here is a vital need—vital from the point of view of public health and common decency and vital to our own self-respect as a nation.

The fault lies not in the farm people as individuals nor as a group; it lies in the whole social and economic setup that forces agriculture to rock along at the bottom of the stream. The remedy lies in joint action by the entire nation.

Other Needs in Rural Areas

Fully as important as decent housing stands the need for better medical care in our rural areas. You are all familiar with the urgency of this problem. More and more our medical talent is being concentrated in the large cities and towns. The old-fashioned country doctor appears to be vanishing. The few remaining are up in years and should not be expected to withstand much longer the rigors of active service. Hospital facilities and nursing care are utterly inadequate to serve the elemental health needs in many farm communities. The same goes for dental care.

We have had recent proof of this in the startling results of physical examinations conducted by the Selective Service Boards.

Here again, planning committees are preparing to find out just how many doctors, how many nurses, how much medicine and surgical and dental equipment and what hospital facilities are required to extend these services adequately to our farm people. They are to suggest possible means for meeting these needs.

Thousands of doctors and nurses will be "demobilized," along with service men and defense workers after the war is over. A fair proportion of them should be attracted into the rural areas where they will be sorely needed.

Need of Modernization of Equipment

Another field that calls for attention is the modernization of farm and rural equipment. Just as agriculture is at the bottom of the scale when it comes to sharing equally in the national income, so it is at the bottom of the scale when we consider the implements and services for the proper functioning of the farm economy. I have already spoken of the need for greater electrification on our farms. There is also a need for a vast amount of new heavy equipment. Where it is not possible or feasible for individual farmers to buy and maintain such equipment, arrangements might be worked out for farmers in special communities to come together and make joint purfarmers need more modern cotton gins. In other localities, cold storage lockers, community canneries, and the like would be of great help.

Here, too, the problem is to get down in black and white a statement of the needs in each farming community. The Department is not going to tell the farmers what they need. The farmers are asked to work together in a systematic manner thru planning committees to determine their needs and to suggest possible ways of meeting these needs, and the planning committees will attempt to set the machinery in motion for seeing that the needs are supplied.

How Well Fed Are Rural People?

Still another field is that of nutrition. I will not dwell on the irony of the fact that many of the very people who grow the Nation's foodstuffs are themselves among the poorest fed of the entire population. Our farm programs are making distinct progress in remedying this condition. But we have by no means done enough. We must intensify our educational program. Too many farm people, and city people too, for that matter, are undernourished simply because they do not know what kind of food to eat. We may find it expedient to investigate such devices as the food stamp plan to cover large areas of the depressed rural section and the school lunch idea.

A decided impetus is being given to better nutrition by the 1942 goals. We should see to it that these goals are kept and extended when the war is over.

Further possibilities are suggested when we examine the question of farm co-operatives. Here the prospects are especially appealing to the small farmers. It is surprising how wide is the scope of activities that may be embraced in the co-operative movement. The most familiar, perhaps, is the marketing co-operative.

Farmers may come together, not only to sell their produce, but also to purchase many of the things they need. They may also co-operate in processing and storage facilities. I have already mentioned the possibilities for purchasing equipment and machinery for group use.

I have by no means exhausted the list of rural services and facilities that should be incorporated into a comprehensive post-defense program.

I have touched but lightly on the important question of the role that rural America must play when our city industries turn from war-time production to a peace-time basis. No doubt there will be an effort made to decentralize many industries, an effort to establish suitable industries in rural communities. This is a problem that requires most careful treatment. I may say that the experts are already on the job and their help will be available to those who plan as the months go by.

The Task of Winning the Peace

We are demonstrating now what we can do in the stress of war. We must demonstrate what we can do when the madness of war gives way to peaceful, constructive effort. I do not share the low estimate of human nature implied in the theory that we are capable of using our manpower and our resources to the fullest only when we are engaged in the business of killing our fellow human beings.

Editorial Comment

(Continued from page 183)

this section. He has served as adviser of several high school F.F.A. chapters, has assisted in directing the activities of a collegiate chapter, has directed F.F.A. radio programs for several years, and has assisted in editing the Florida Future Farmer Magazine. Besides doing this work he has written two books in this field that are widely used.

Mr. William Howard Martin, State Supervisor of Agricultural Education, in Vermont, is the new Evening-Class editor. Mr. Martin is a graduate of Vermont Agricultural College and Cornell University. He taught agriculture from 1931 to 1936. In 1937 he became Assistant Supervisor and Teacher-Trainer in Vermont and was made State Supervisor and Teacher-Trainer in 1940. He is chairman of the Adult Education Committee and a member of the Research Committee of the North Atlantic Region. Mr. Martin has evidenced much interest in part-time and evening-class work in his state and is eminently qualified to edit this section of the magazine.

Dr. Field of Minnesota, methods editor, has the longest period of continuous service. He began in 1930. Dr. Getman of New York has been editor of the Professional Section of the magazine, with the exception of two years, since the department was established in 1930. Dr. Gregory of the United States Office of Education was one of the original special editors. He and Dr. Getman are the editors of the Professional Section. Dr. Davidson of Kansas has had charge of the Book Review Section since its establishment in 1931. The Farm Shop Section has had only one editor since its establishment in 1932—Mr. L. B. Pollom of Kansas, Dr. McCellan of Iowa has had charge of the Part-time Section since its establishment in 1937. Dr. Anderson of Pennsylvania has served since 1938 as editor of the Research Section. Mr. Angerer of Oklahoma is a relative newcomer. He has charge of the Supervised-Practice Section. The Future Farmers of America and the Evening-Class Sections have new editors.

We feel that the staff of special editors is well balanced. There are five with long and continuous service, two with four to five years service, and three who are assuming responsibilities for the first time during this year. Each special editor would like to have you write an article for his section.

Community Co-operatives

(Continued from page 189)

canned 25,000 cans of food; stored 3,250 bushels of sweet potatoes; and did $15,500 worth of business in the co-operative store.

The Smoaks Co-operative Exchange was organized in 1935. It has a feed mill, cannery, grist mill, saw mill, potato curing house, seed fumigating house, warehouse, two tractors, a combine, grain drill, disk harrows, plows, and a pickup truck. It has a membership of 156 farmers who are evening-class members. It has connections with the State Warehouse System and makes loans to farmers on stored products. It does $10,000 worth of business a year and has a full-time manager.

The Floyds Cold Storage Association of Nichols has 40 stockholders. They subscribed $4,000 and borrowed $3,200 from the Bank of Co-operatives. In less than one year they cured 52,000 pounds of meat for 200 farm families. In 1940–41 they cured 151,000 pounds of pork for 800 farm families.

I would like to close with a statement about the Shellman Co-operative that is sponsored by the department of vocational agriculture at Shellman, Georgia. This co-operative is made up of evening-class farmers and F.F.A. members. They do an annual business of buying and selling of $100,000. They sold $25,000 worth of pecans this year. They bought $9,000 worth of onions and cabbage plants thru the Randolph County Onion Growers Association. From the onion plants they will probably sell $35,000 worth of onions. The farmers save $10,000 thru the co-operative. The teacher of vocational agriculture, Mr. J. P. Cunnels, writes me, "My farmers like the co-operative idea and I do too. A group of 31 of my farmers just presented me with $175 in National Defense Bonds as a Christmas present."

*Paper presented before the American Institute of Co-operation, Atlanta, Ga., January 14, 1942, by Dudley M. Clements, Federal Agent, Agricultural Education, U. S. Office of Education, Washington, D. C.

Agricultural Planning For Defense

(Continued from page 195)

The farmer's business is preserving and building up human life. He is accustomed to produce as abundantly as he can. Why is it not possible for business and industry to proceed in the same spirit? Why should we continue to set up conventions and artificial barriers of thought and practice that hold us back from enjoying to the fullest the products of our factories as well as the products of our farms?

The manner in which we deal with these questions will determine the kind of life we are going to lead for centuries to come.

There will be a strong temptation to let things slide when the war is won. Therein is our greatest danger. We call it the "reaction." Some think it is inevitable.

But human beings have a way of surprising even themselves sometimes. If the people of this country see clearly before them the ways and means of building a greater and more satisfying life in America at the end of this war, I do not believe they will let themselves down.

At the least, it is worth a try.

*An address delivered before the 1941 convention of the A.V.A. Agricultural Section, Boston, Massachusetts, December, 12, 1941. Mr. Ayers is connected with the Southern Division, A.A.A.

We do not know, or hardly suspect many of the things which will influence our vocational programs in the future, but we can count, with absolute certainty, that most of our present practices will be obsolete tomorrow. The teacher who this year is using exactly the same methods as he used last year is being left behind.—Selected.

Supervised Practice In Farm Shop

(Continued from page 188)

2. Guide the students in planning their supervised practice. Here, again, the teacher's objectives should be not only to get good plans made for the practice to be carried out but also to teach good planning. The following might constitute good teacher objectives:

Developing the ability and attitude necessary to see what operative jobs are involved in the work, and make plans for securing needed information, skills, and techniques; deciding when to do the work; providing facilities for doing the work; selecting and securing suitable material for doing the work; and estimating costs. The objective should also include good plans made for carrying out the practice.

3. Give as much personal supervision to students as possible. In this respect the teacher's objectives might be to develop ability to do the operative jobs involved, give encouragement so that the student will "carry thru" and see that a good job is done so that the practice helps meet the farm-shop needs of the farm.

4. Develop at school the abilities that are applicable to the supervised practice, and show how they apply.

5. Encourage the students to talk over their procedures and problems with the teacher and the class.

6. Secure good records of labor and expenses and evaluation of the work done.

F.F.A. Does Its Bit

(Continued from page 197)

helping to meet farm labor shortages.

Some people doubt the ability of youth of high school age to serve in any extensive way in an emergency such as that in which we find ourselves at the present time. For my own part, I believe that these American youth can make and are making a substantial contribution both in and out of the armed forces. Because of the principles upon which the organization is built, its clear-cut purposes, its teachings to members through actual participation, the manner in which it is financed, and its host of capable adult leaders, I doubt if any youth organization has more to contribute in the present situation than the F.F.A.

Co-ordinating Classes

(Continued from page 191)

There is now a shortage of technically trained men in these fields in many communities.

Fortunately the government has provided our departments of vocational agriculture with equipment for training out-of-school boys in auto mechanics, metal work, woodworking, and elementary electricity. In most schools the equipment is used only a part of the day for the training of defense classes and this makes it very desirable to co-ordinate the young-farmer training with the defense training in order to make better use of equipment and capitalize on the interest created by the present situation.

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UTAH
s—Mark Nichols, Salt Lake City
t—L. R. Humpherys, Logan

VERMONT
s-t—W. H. Martin, Burlington

VIRGINIA
s—W. S. Newman, Richmond
t—H. W. Sanders, Blacksburg
ct—G. W. Owens, Ettrick

WASHINGTON
s—J. A. Guitteau, Olympia
t—Everett Webb, Pullman

WEST VIRGINIA
s—John M. Lowe, Charleston
t—D. W. Parsons, Morgantown

WISCONSIN
s—L. M. Sasman, Madison
t—J. A. James, Madison
t—V. E. Nylin, Platteville
t—J. M. May, River Falls

WYOMING
s—Sam Hitchcock, Cheyenne
t—L. S. Crawford, Laramie

*See complete directory of state directors; state and assistant state supervisors; regional or district supervisors; colored supervisors; teacher-trainers; itin-