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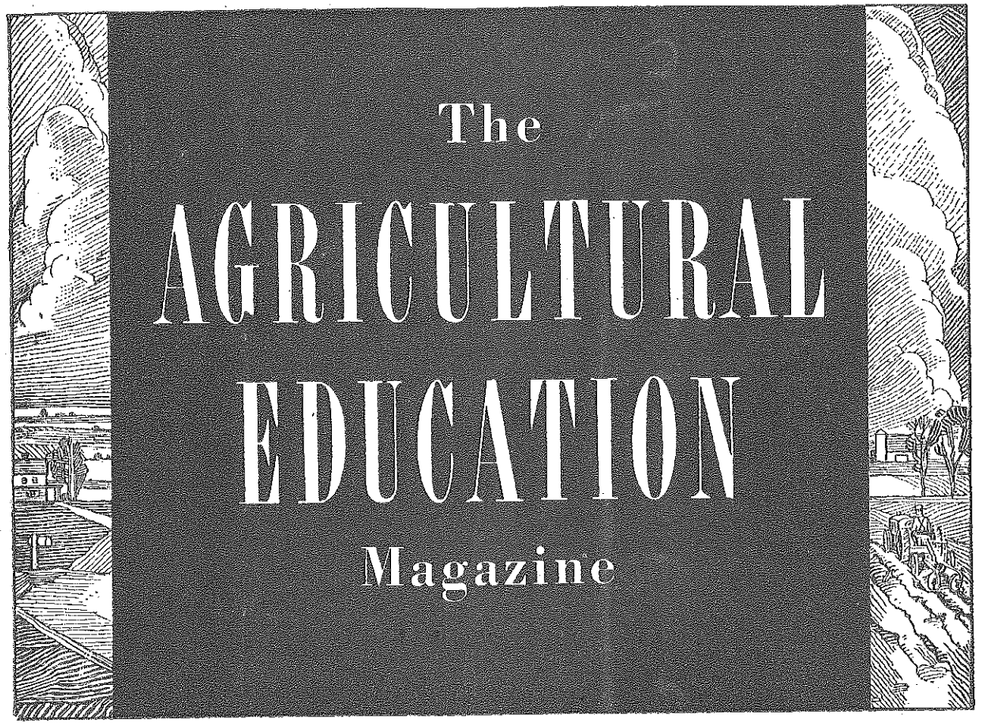

Wisdom is not to know at large of things remote, but to know that which about us lies in daily life.

—Milton

VOCATIONAL AGRICULTURE
For
TEACHERS
Teacher-Educators
And Supervisors
OFFICIAL PUBLICATION

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Editorial Comment

Individualized Instruction

TEACHERS of vocational agriculture have given much thought to individualized instruction. The teacher who studies the student and the student's home farm situations as a basis for setting up the supervised practice program and who builds the teaching program upon the problem situations in the supervised practice program is face to face with individualized instruction. If the curriculum program for each student grows out of the problem situation found on the home farm, the problems must be individual, and no two students will have exactly the same problems.

How different the problems encountered by members of a group will be, largely depends upon three factors: (1) the experiences of students, (2) the diversity in type of farming on the farms represented by the group, and (3) the teachers' ability to lead students into problems that have common elements.

There is little to be done about the past experiences of the student or the type of farming practiced on his farm. There is much the teacher can do in setting up individual practice programs and curriculums to lead students into problems that are appropriate for group instruction. If the type of farming in the community is similar on all farms, the teacher may lead pupils to set up similar practice programs: that is, have the same kind of enterprises. If the enterprises are about the same, the curriculum must be made up of the same type problems.

It is our belief that teachers should make every effort possible to formulate programs that are "individual" yet that are similar enough to permit of group instruction. With a little effort, much planning, and constant maneuvering of students each member of the group may work at *his* problem and at the same time work at it with other members of the group. The highest type of *thinking* is *group thinking*. An editorial in the Stephens College News Letter (Columbia, Missouri) expresses a point of view that will be of interest to those who have tended to veer far toward "individual" instruction.

"Unclear thinking about individualized instruction can lead to a number of abuses in practice. It can blind the educator to the common and basic values desirable in all members of a group; it can lead to uneconomical outlay of time and energy in an effort to 'tutorialize' class procedure; it can lead to a false balance between social obligation and individual 'rights' by weighting unduly the personal interests of students (sometimes 'whims') as opposed to common needs and responsibilities. But such distortions of practice can occur only under the extreme concept of individualization which ignores the psychology of group motivation, the basic commonality of most educational objectives for most students, and the necessary identification of interest and need in the planning of student learning. Any adequate concept of functional education recognizes interests and needs as mutual servitors and the necessity of 'individualizing' in terms of both.

"Individualized instruction is a philosophy—not a technique. It may take the form of flexible assignments, permitting and encouraging choice; it may take the form of individual contracts of work, student-planned or teacher-planned; it may result in differentiation of assignments at different ability levels; it may rest heavily upon a highly developed conference technique; or it may utilize an objective diagnostic test procedure. Certainly it carries no implication of the abolition of group instruction. If the teacher believes that the objective of his teaching is the optimum development of each student under his instruction, the student and his needs become his criteria for teaching. He ceases to bow down before the idols of subject matter. He comes to honor ends above means. He sees in the developing student, who is the product of his educational effort, the measure of his success."

The results achieved in all adult educational effort are dependent upon the receptivity of the people. To secure receptivity, appreciation must be developed in those who are to be reached. This appreciation can be aroused only by relating the learning experience to the daily life and activity of the individual.—Hans Ludwig Held, Journal of Adult Education.

Where Do We Go From Here?

FOR 25 years we have been drilling, drilling, drilling, in the field of vocational agriculture on parade grounds provided by every state and territory of this country. On this field of preparation, we have been moving in formation, limited largely by financial support and organization policies of certain Federal enactments for the "promotion" of this phase of a national program of education. We think this period of preparation was essential and has been very valuable. We also think these enactments were wise in providing limitations and restrictions during this promotional period of drill and training.

Now, after 25 years of intensive preparation, we have trained administrators, supervisors, teacher-trainers, and teachers and we ask: "Where do we go from here? What are our plans, objectives, and policies in utilizing this vast resource of training and experienced personnel?"

Of course, we are still on the march. That we know. We are proud of it, and we will continue to march shoulder to shoulder with those who continue to go forward in this field. However, we sometimes wonder if we are not marching 'round and 'round the field as tho it were fenced in by the limitations of legislation which was designated more than a quarter of a century ago as a try-out pattern. We raise this question because, as we march, we gaze beyond this restricted field and see millions of men untrained for their daily tasks, and other millions not even employed at any vocation.

We think this is a serious question earnestly and frankly put.

The war, of course, has made temporary openings thru the fences, both in the restricted field of vocational agriculture and in employment opportunities for farm people. We pray, however, that the war will end in the not distant future.

Then what?

Will we retreat to the old parade grounds to drill behind the enclosure set by the limitations of our present policies, financial support, and legislation, or will we come forth with an *all-out* program of vocational education for farm people based on sound policies in the light of total vocational needs?—J.T.W.

American Education Week

EDUCATION FOR FREE MEN is the theme of the 22nd annual observance of American Education Week, November 8-14. This theme is most fitting at a time when the entire world is at war to determine whether freedom or tyranny shall prevail among men.

American Education Week is a time for a concerted effort on the part of all school systems thruout the nation to help the public understand why education is more and not less important as a result of the urgency of the war effort. It is a time for interpreting to the people what the schools are contributing to the war effort and the part that they must play in the peace that is to follow after military victory is achieved.

The National Education Association has prepared materials to assist local school systems in the observance, among which are posters, leaflets, stickers, manuals, plays, and other materials. Write to the National Education Association, 1201 Sixteenth Street, N. W., Washington, D. C., for complete information.

Vocational Education Becomes Popular

VOCATIONAL education has passed from a period of unpopularity into an era of popularity; this in turn will be followed by an era of public pressure or demand which is more than just popularity—demand for vocational training as a means of assistance in occupational adjustments. There are problems involved in this rapid popularization of vocational education. Unless educational leadership all along the line is prepared to develop, without delay, a comprehensive, effective, co-ordinated, co-operating system of vocational training, we may find agencies and services not originally constituted to provide educational services taking over this field on a highly centralized and federalized basis.—L. H. D.

Professional

A. K. GETMAN — R. W. GREGORY

The Food Supply and Prices

WILLIAM I. MYERS, Head of the Department of Agricultural Economics and Farm Management, Cornell University

W. I. Myers

THERE are two serious dangers in the present public attitude toward farmers and food production. The first of these is the widespread belief in an abundance of food; the second, that parity prices of farm products give farmers equality of income with other groups. I shall devote a substantial part of the space you have given me to a review and discussion of the validity of these two statements and their effect on the Food for Victory program.

Let us take first the widespread but erroneous belief that we have an abundance of food and that nothing can happen to our food supply. Right now the newspapers are full of items about another large crop of wheat and the present favorable prospects for other crops. This tends to increase the public apathy toward the real importance of food supply in wartime.

Prior to 1900, the physical volume of agricultural exports followed the upward trend in total crop production. The downward trend in exports which began about 1900 has continued to the beginning of the present war except for a sharp temporary increase during World War I. One reason for the downward trend in agricultural exports of the United States was the competition of other exporting countries, such as Canada and the Argentine. Another factor was the efforts of the European countries to become self-sufficient. However, the most important factor was the increased population of the United States. Since our domestic market is the best in the world, United States farmers produce first of all for home use, and export only the remainder.

Decrease in Food and Feed Crops

The per capita production of food and feed crops has decreased about 14 percent in the last 25 years. During that time population increased about one-third, while the production of food and feed crops increased only about one-seventh. Even in the big crop years, 1939–41, the per capita production of food and feed crops was six percent below the 1925–29 period. The decline in agricultural exports has been accompanied by a marked decrease in per capita production of crops. With any given size of crop there has been less above domestic needs available for export. At the same time the margin between surplus and scarcity ing narrower during recent years.

The decline in exports of food that began about 1900 was temporarily reversed during World War I. The decline was resumed in 1922 and continued until the beginning of the present war. From 1933 until 1941 food exports ranged between two and five percent of farm income.

During World War I, in response to the demands of our allies, food exports increased from about six to about 16 percent of farm income. About half of this increase in exports was obtained from increased production, while the other half came from reduced domestic consumption. In order to meet the demands of our allies for food we ate more grain and less meat.

High Yields

During the last five years the acreage of crops has been below normal. However, yields have been so high that production has been large. The large production of recent years was obtained on a reduced acreage by the highest yields in our history. For five consecutive years the average yields per acre each year have exceeded any year in our history prior to this period. Imports of vegetable oils from the Far East have been seriously curtailed by the war. Some of our land is required to grow these foods. England has changed her agriculture by increasing the production of crops but has decreased livestock production. Naturally, the English people, being short of shipping, are importing animal products rather than the feed to convert into animal products. They are depending on us for about one-fourth of their animal protein, and their demands are certain to increase because the war is causing the progressive demoralization of food production in England and other combatant countries.

Changing Food Needs

These developments focus attention on the great responsibility that is being placed on our livestock industry to meet the increased demands of industrial workers and the lease-lend requirements. This war has brought about great changes from World War I in the amount and type of equipment used by our armed forces. We require enormous numbers of tanks and planes and these require factories, machine tools, and workers. A similar change has occurred in our food requirements, with a concentration on livestock and livestock products. Our livestock herds and flocks are our food factories. As you know and teach your boys, many pounds of feed are required pound of lard or one pound of dried milk for shipment to our armed forces and allies. It is not so simple as producing wheat, where you can plow up the land, grow the wheat, and then ship it. We must keep two vital factors in mind: Produce maximum quantities of feed crops, and maintain a favorable relation between livestock prices and feed prices to get the essential foods produced.

Public Should Be Concerned

The greatest danger in this situation is the public complacency and the belief that no consideration need be given to agriculture: the tendency to take an abundant food supply for granted. Because of the long depression with its reduced demands, because of five consecutive crop years unparalleled in our history, and because of large stocks of grain accumulated under government loans, the public has come to believe that nothing can happen to our food supply. Recent phenomenal yields are thought to be the result of government programs, and hence will continue. These very high yields are due partly to more intensive production on a smaller acreage, partly to hybrid seed corn, partly to conservation practices, and to a very great extent, to favorable weather. No way has yet been found, unfortunately, to insure good weather. If the war continues for two or three years, increased exports of livestock and livestock products will have to come mainly out of our home consumption. We are likely to have to reduce our food requirements by eating more grain and less meat. How soon that situation will come, how severe it will be when it does come, is pretty much in the lap of the weather gods. There is very little probability that there will be a shortage of food, but a real probability of a shortage of some livestock and livestock products.

Needs

To sum it up, the present situation calls for the maximum production of all essential foods. We have a critical need for all we can produce as long as the war lasts and for at least a year or two afterwards to feed a hungry Europe. The needs of our allies are increasing steadily, and even if we attain the 1942 goals, we will have less for domestic consumption than in 1941. We shall have enough to eat, but even with a six percent increase in total production we shall have less for ourselves. Food production is of equal importance with the production of planes and ships.

Parity

which has handicapped agriculture is that parity prices are adequate to insure maximum food production and give farmers equality with other groups. In the last few months, during consideration of the price control bill and since, farmers have been the victims of much undeserved criticism. They have been accused of profiteering and of promoting inflation because of the attempts of their representatives to put the legal price ceilings at not less than 110 percent of parity. These criticisms are based in part on the marked increases in farm prices since the war started in September, 1939, which are assumed to be inflationary. We cannot blame urban dwellers for not understanding that this rise in farm prices was only a recovery from depression levels that caused financial disaster and severe suffering among farm people. But the most important cause of the criticism has been the general but erroneous belief that parity prices would give farmers equality with other groups.

Labor Shortage

The Number One problem on farms is the maintenance of an adequate supply of skilled farm labor. This situation is bad and is certain to get worse as long as the war lasts. The shortage of skilled farm labor has been due in part to selective service, and in part to volunteering, but more than anything else to competition with war industry. Industrial competition is a problem of farm prices versus war industry wages.

Many farm boys and girls, many hired men, and some farmers have been leaving New York farms since the war started. The weekly earnings of New York factory workers are the highest in history, while the cost of living is considerably below the level of the twenties, a period of high city prosperity. In May the buying power of New York factory workers in terms of the cost of living was 92 percent higher than in 1910–14 and 47 percent above 1926. On the other hand, the buying power of farm products is just getting back to the 1910–14 level. While the buying power of farm incomes has increased in proportion to the increased efficiency of production, the gain has been small in comparison with the increased buying power of industrial wages.

Buying Power Compared

Over a period of several decades the buying power of city workers and of farmers increases slowly as the output of each worker increases. However, the short-term fluctuations of the two groups differ widely. In periods of falling and low prices the buying power of employed factory workers increases rapidly while farmers have no increase or an actual decrease. In periods of rising prices the buying power of employed workers increases slowly and may decline, while that of farmers increases. A disproportionate share of the increased national production has gone to urban people during the last decade.

New York is near markets but we have as an offsetting disadvantage extremely severe competition with all types of war and other industries offering high wages. During the depression from 1929–33, farm wages declined farther than the earnings of factory workers because there since 1939, farm wages have taken an almost perpendicular rise. We had to raise wages to keep hired men on farms in the face of abundant opportunities for industrial employment at high rates. The latest monthly figures are: farm prices, 144; farm labor, 198; earnings of factory workers, 313. In spite of the fact that farm wages have risen more rapidly than farm prices and are at a much higher level, family and hired labor and some farmers have continued to leave farms. It is impossible to keep labor on farms without competitive wages unless we resort to drafting labor for farm work. The ability of farmers to pay competitive wages is limited by the level of farm prices.

Size of Farm Labor Problem

The efficient New York food-producing farm is approximately a two- to three-man business. Nearly two-thirds of the milk for our cities is produced on farms employing two or more men. It takes the farmer plus family labor and some hired labor to operate an efficient business. On April 1, 1942, the supply of farm labor was 51 percent of normal, a decline from 90 percent in April, 1940. We are talking a lot about seasonal harvest labor. This is a difficult but not insoluble problem. The use of high-school boys, of transient labor for which camps are provided, and of farmerettes, will help out because little skill is required and it is a short peak period. The critical period on our dairy farms is twice a day. The critical point on other food farms is skilled year-men. If an experienced hired man or son leaves a farm and cannot be replaced, production will decline. No temporary palliative will help.

When prices fell in 1929–33, the prices of farm products declined more violently than the prices of articles farmers buy. As a result, the farm depression was longer and more severe than the city depression. During the last half of 1941, for the first time since 1930, New York farm products as a group reached approximate parity with the cost of articles farmers buy. The present level of farm prices is also in reasonably equitable relation to farm debts.

Farm Prices and the War

One important difference should be noted between the present war and World War I. World War I began during a period of moderate prosperity when prices of farm products were in reasonable adjustment with other prices and with debts. The present war began at the end of a long and severe depression, with farm prices at very low levels and at a serious disadvantage as compared with the articles farmers buy, retail prices, and the cost of living. Now that reasonable equality in prices has been reached, any further great rise would bring only very temporary advantages and would probably bring long-time serious disadvantages to farm people. While farm prices rise or fall more rapidly than the costs of articles farmers buy, there is more prompt adjustment between them during periods of rising prices, such as from 1914 to 1920. While debts are easier to pay during periods of rising prices, there is a great temptation to go into debt in the hope of making still more money.

Agriculture wants neither inflation mit farmers to maintain full production of food. The public generally does not realize that parity is only a legal formula. It is not, as it sounds, a guarantee of equality. It is a measure of the purchasing power of farm products in terms of articles farmers buy for business and living. The price of a product is at parity when a given quantity of that product will buy as much of the articles farmers buy as it would have bought during the base period, 1910-14. There are two weaknesses in this index of costs. It is based on the averages for the United States as a whole and does not reflect the great differences in expenditures for such items as feed and fertilizer among different regions and states. Much more important than that, the index of costs does not include the wages of farm labor, which are an important and necessary cost of farm operation, particularly in New York farming, which does not lend itself to the general use of large-scale machinery.

Labor Costs Compared

An index of costs in dairy farming in New York has been prepared which includes wages of farm labor and all other business costs of farm operation. In May, 1942, New York farm prices were 95 percent of parity according to the present legal formula. However, they were only 91 percent of costs in New York dairy farming and only 72 percent of New York farm wages. Prices of farm products determine the wages of family labor and the ability to hire other labor just as wage rates determine the pay of factory workers. While present farm prices and incomes represent substantial improvement from depression levels, they are unfavorable in comparison with the real earnings of factory workers.

When the demand for men is keen, the real question is how farm wages and farm incomes compare with the pay of alternative jobs in industrial work. We have extremely keen competition for men, with many alternative opportunities for employment. This is a decisive factor for some family labor, some hired workers, and marginal farmers. The critical areas are those that are near war industries. But gradually these industries are drawing people from greater distances as high wages and demand for men continue. Farmers, I believe, are willing to give up, in the interests of national welfare, the normal expectation of higher incomes during a period of rising prices. But the crucial problems remain: What prices are necessary to retain enough labor to get the food produced?

The Main Job

In its overenthusiasm for fighting inflation, the public has a tendency to forget that the main fight is against the Axis. If we are going to win that fight, we must have maximum production of food and munitions. The suggestion has been made that the ceiling on farm prices should be reduced to parity. One hundred and ten percent of parity is a bad slogan because it sounds to consumers as if farmers were being greedy. However, it gives approximate justice. The point is that the parity figure is not an accurate measure of costs since the index of costs used is considerably below the real cost of food production in New York. If ceilings are to be reduced to parity, it is imperative that

Methods

A. M. FIELD

A Skills Course Offered at Montana State College

D. L. MACDONALD, Assistant Supervisor, Bozeman, Montana

THE skills course, which has been tried in Montana for the past two years, is based on a questionnaire submitted to our vocational agriculture teachers three years ago. They were asked to state whether or not they could do 249 skills and managerial jobs that a farmer has to do in carrying on his farming operations. In the survey the men were asked also whether or not they obtained knowledge of the job in or out of college and whether or not, in their opinion, an agricultural graduate should know how to do that particular job. After tabulating the results, it was discovered that the teachers, as a group, were woefully weak in their ability to do many of the farm skills. They needed training in many jobs in which it had been assumed they were skillful because they were farm-reared.

D. L. MacDonald

The reasons for this condition may be that, first, the teacher was reared on a specialized farm such as a cattle or sheep ranch and failed to come in contact with jobs found in other types of farming; second, there may have been a division of labor at home where the father or other members of the family handled all the jobs of a certain enterprise and the teacher received no practice in that enterprise; third, the jobs may have been done on a day while the boy was at school; and fourth, few college courses in agriculture give the prospective teacher a chance to participate in actually doing the skills or managerial jobs found in the enterprises studied.

Opinions of Parents

In order to find out whether or not the fathers of boys enrolled in vocational agriculture believed these jobs should be taught, farmer opinion was obtained by means of a questionnaire which, when tabulated, showed that they wanted many of these skills taught to their boys.

This problem could be solved by instituting a five-year training program, with the last year given over to participation in the various skills, but until that time arrives, a two-credit course is being tried at Montana State College which meets, in a small way, the problems listed above.

Organization of Course

The class meets in a weekly four-hour period. Each man is assigned a job in a section of the county to be studied. He is required to visit this project at least once a week. Each man is also assigned a job in a section of the county to demonstrate the making of a grasshopper egg count and determination of probable infestation for the coming year. On this trip the men received further practice in the identification of adult species and their habits and in the use of the tables of the Bureau of Entomology to calculate the amount of poison needed.

5. Castrating and Worming Hogs. The castrating and worming of hogs was practiced by the class under the supervision of the herdsman. This skill was known by some of the class members, and they demonstrated the job and assisted the members of the class who had never castrated hogs.

6. Pullorum Testing of Poultry. Instruction on this problem was carried out under the direction of the extension poultry specialist. The men were given practice in making the rapid whole blood test and, at the same time, received training in breed characteristics of the birds being tested.

7. Marketing. Work was given on the marketing of livestock co-operatively. The class, under the direction of the manager of the Gallatin Co-operative Marketing Association, was given practice in marking, weighing, loading, and billing out three decks of lambs being shipped by the Association.

8. Dressing Turkeys. The class received practice in killing and dressing turkeys. This lesson was done on a farm in the college community, and in addition to the above jobs the men received instruction in the cooling and care needed in transporting the dressed birds to the shipping point. Another lesson along the same line was on the marketing of turkeys and capons. In this unit, thru the assistance of the local manager of the Northwest Turkey Growers' Association, the men received practice in weighing, grading, head-wrapping, and in packing and loading of refrigerator cars.

9. Butchering Hogs. The men were given two lessons in the butchering of hogs. This unit included the cutting and trimming of the carcass in preparation for curing. A local butcher was in charge.

10. Reading Soil Maps. In order for the men to learn to use a soil map, how to read soil horizons and profiles in the field, and how to make a soil survey, a unit was given on this phase of agriculture. The group was in charge of the assistant agronomist of the experiment station.

11. Electrification. The rural electrification unit was taught by the extension specialist. The men were given practice in wiring and installing switches and service outlets. They also received some practice in "fishing" for wires in old buildings.

12. Packing. In the western part of the state there is some demand for men who know how to pack, so one unit was given by the U. S. Forest Service in teaching the men how to pack saw buck and Decker saddles. At the same time they received practice in throwing the diamond hitch.

Teaching Personnel

The demonstrators are experts in their fields. They are drawn from among local farmers, from the teaching staff of the various departments of the college, from herdsmen at the experiment station, and from specialists from the extension service, forest service, and Farm Credit Administration.

In many cases the skills practiced in this course were touched upon in other courses, but due to seasonal difficulties could not be taught in the regular class. The college instructors have been very co-operative in giving their time to make it possible for the trainees to receive this added instruction in the skills class.

The trainees have been required to keep a complete set of notes on each job and to prepare lesson plans on how they would teach each skill to a class in vocational agriculture.

Jobs Studied

During the year the men have participated in the following jobs:

1. Vegetable Showing and Judging. In this unit the men made a trip to a market gardener's farm and secured samples of vegetables as they would do in securing an exhibit for a fair. After washing and trimming the samples, the men placed the samples as tho they were the judges at a community fair. This lesson was taught by the head of the Horticulture Department.

2. Selection and Preparation of Sheaf Exhibits. This unit was taught by the agronomy specialist of the Montana Extension Service. He took the men into the field where he showed them how to select samples of wheat, oats, corn, and forage. Later the men were given practice in making sheaves.

3. Operation of Weed Control Equipment. The lesson on operation of weed control equipment was taught by members of the Agronomy Department and the local county agent. The men were taken into the country where they were given experience in the operation of the various dusting and spraying machines. The trainees developed a weed control program for one of the farms visited.

4. Grasshopper Egg Count. The State

Pennsylvania Evaluates Its Local Programs of Vocational Education in Agriculture

C. S. ANDERSON, Teacher Education, The Pennsylvania State College

DURING the past two years considerable research effort in Pennsylvania has been devoted to the evaluation of local programs of vocational education in agriculture. The work was initiated by Dr. F. W. Lathrop, research specialist in Agricultural Education, from the United States Office of Education. Doctor Lathrop came to Pennsylvania and conducted two demonstration evaluations. These demonstrations were attended by the staff personnel from the State Department of Education, the Teacher-Training Department, and by area supervisors of vocational agriculture.

C. S. Anderson

Schools Participating

Thirty-five schools, one from each of the supervisory areas of the state, were then selected and scheduled for program evaluations. These 35 schools represented Pennsylvania's contribution to the nation-wide sampling of schools designated for study by the U. S. Office of Education. *Evaluative Criteria for Vocational Education in Agriculture* (1940 edition) prepared by The National Standards Committee in Vocational Education in Agriculture in co-operation with the U. S. Office of Education and The American Vocational Association constituted our basis for direction, guidance, and fact recording.

Organization of the Study

A committee of three members was constituted for each school. The writer served as general chairman of all committees. Other committeemen were drawn from among near-by area supervisors. In most cases men from the state supervisory staff and other members of the teacher-training department also assisted. No person served on a committee who had not observed or participated in the two demonstration evaluations. Two or more days were devoted to a single evaluation, and schools were evaluated at the rate of approximately one a week.

The area supervisor, the high-school principal, and the teacher of agriculture each assumed assigned responsibilities for collecting in advance the required supplementary data. The committees moved into the schools and went to work according to a schedule. The agricultural teachers were freed from all of their regular school duties in order that they might spend consecutive time with the committees. The members of the agricultural classes were generally required to spend the two days visiting other subject matter classes in the school, altho in a few instances an agricultural education senior from the Teacher-Training Department accompanied us and took over for the regular teacher. In many schools the principals devoted practically full time to observing the evaluation process. In a few cases county superintendents of schools listened to our discussions. To observe and study our plan of procedure, representatives from the supervisory staff in vocational home economics attended two complete evaluations.

Some Things Discovered

Programs of vocational agriculture in Pennsylvania schools as a group rate well above a median or average score of three. The median rating for the 35 programs was 3.5.

Supervised farm practice work with the "lower third" boys presented a problem and a weakness in many programs. Teachers generally felt that the lower third boys were more likely to become farmers in the community than were boys in the upper groups, but they were usually at a loss to know how to set up a challenging type of project program for them.

One of the most perplexing questions in the evaluation bulletin was: *How well adapted is this supervised practice program to enable this young man to establish himself in farming?* Upon the completion of the 35 evaluations the writer submitted the evaluation record books to a committee of experienced agricultural teachers asking them to examine critically each record and the accompanying supplementary data, and then to answer the following question, "*In your judgment did this boy have a long-time supervised practice program?*" In all 105 project programs were examined by the special committee. Their replies were yes, 27.6 percent; no, 62.6 percent; doubtful, 9.8 percent. In the judgment of the committee 38.1 percent of the boys in the upper third area had long-time project programs under way while only 14.2 percent of the boys in the lower third met the requirements in this respect. It is evident that in Pennsylvania we need to place greater emphasis on long-time project program-planning.

Some very excellent F.F.A. programs and activities were examined and the comparatively high scores reflect this situation. Chapter budgets were not always in good shape, and frequently there were no provisions for F.F.A. meetings during summer months.

The schools that were teaching young-farmer classes were found to be doing an excellent job, but there were a good many schools in the group evaluated that had not as yet organized young-farmer classes. Follow-up and farming-status data of former students were not always available.

Evaluations Continue

The 35 originally designated programs evaluated, summarized, and reported on, the remainder of the job was turned over to area agricultural supervisors and local committeemen. At the present writing more than 100 additional programs have been evaluated. Vocational agriculture is taught in 309 Pennsylvania high schools and it is expected that by 1943 every agricultural program in the state will have been studied.

Our state-wide evaluation project has proved to be helpful and stimulating to teachers, supervisors, school administrators, and teacher-trainers alike. All of us have become more conscious of existing problems and problem solutions.

The measuring device employed may not always have fitted our particular circumstances but thru use we have discovered ways and means of improving it. The National Committee on Standards for Vocational Education in Agriculture has already produced a revision of the instrument, *Self Evaluation of Teachers of Vocational Agriculture*, for which we predict widespread acceptance and effective use.

Production Credit Association gave the men experience in evaluating property to be used for collateral in securing a P C A loan. In this unit the men were required to fill out the set of papers a boy would be required to prepare in securing a loan from the P C A for a project loan.

14. Candling Eggs. Under the direction of two of the dairy inspectors from the State Department of Agriculture, the members of the class were required to candle a case of eggs and take the egg graders' examination.

Other Units

The men have been given work in pruning fruit trees, operating hot-beds, planning a soil conservation plan for a specific farm, castrating and docking lambs, caponizing, shearing with blades, and irrigating. Each trainee has been required to work 12 consecutive hours in a lambing camp.

It will be noted from the description of the above units that the work has been cutting across all departments. Student interest in some cases where a trainee has been unable to register for the course, he has attended class without credit.

It is realized that there are many improvements that can and will be made in the course, but it is also felt that until a fifth year is added to the training program designed to meet those deficiencies, a course similar to the one described will aid the trainees in being better prepared to teach vocational agriculture.

Results

It is expected that the following benefits will be received from this course:

1. Trainees will develop the idea of presenting subject matter on the doing level.

2. Trainees get further practice in how to plan and handle field trips at all times of the year.

3. Trainees will become interested to learn farm practices on the home farm during summer months.

4. There may be more practical activities and exercises inserted into the

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John Burroughs was never too old to change. He kept growing to the last. He who is too set to change is dead already. The funeral is a mere detail.—Henry

Supervised Practice

C. L. ANGERER

Setting Up Sound Farming Programs

W. E. STUCKEY, Critic Teacher, Ohio State University

MOST teachers of vocational agriculture realize that before we can teach our pupils effectively, sound farming programs must be set up. As a result of my contacts with different teachers in Ohio and other states, I find that there is much diversity of opinion as to the meaning of *sound farming program.*

What Makes Up a Sound Farming Program?

In the bulletin, "Teaching Procedures in Developing Boys," Mr. E. O. Bolender, Assistant State Supervisor of Ohio, lists the following characteristics of a sound farming program:

1. It should include the enterprises on the farm needing improvement, assuming that these enterprises should be continued.
2. It should take into consideration the likes and dislikes of the boy.
3. It should fit in with the home-farm business.
4. It should provide opportunity for immediate financial returns both for the boy and for the family.
5. It should be within the limitations of finance available.
6. It should be of sufficient size to be worth while and practical, but not beyond the ability of the boy from either a labor or managerial standpoint.
7. It should be continued and expanded over a period of years, finally aiding the boy in becoming satisfactorily established in farming.
8. It should include or provide opportunity for the development of the desired attitudes, ideals, and abilities of the boy.
9. It should improve the physical facilities for family living.

For the present let us accept the above characteristics as those of a sound farming program.

Hold Father, Son, and Teacher Conference

A satisfactory program can be set up only if all the parties concerned understand the situation thoroly. In order to be sure that this condition exists it will be necessary for the instructor to visit the boy on his home farm during the summer and have a *father-son-teacher* conference. At this conference the teacher should explain the vocational agriculture instructional program to the father and boy. The father should understand that the value which his son will derive from the vocational agriculture course will depend to a large extent upon the farming program set up. The father should know that the boy is expected to make all important decisions. He should realize that the father and teacher should act as advisers and not as the boss. The teacher should explain the characteristics of a sound farming program to the father and boy so that they can think and talk about it before school starts in the fall.

Use the Unit System

When the school term opens in the fall, the first thing I do is to have each boy plan his farming program for the year. One of the first questions asked at this time, especially by freshmen, is: "What are some satisfactory projects that I can elect for my farming program?" The class will immediately set out to answer this question. The boys are divided into committees and each committee will make up a satisfactory list of desirable units for both productive projects and other supervised practice. These units are set up for each farming enterprise prevalent in the community. The following list of units for the swine enterprise was presented to the class by the committee. This list is typical of the units set up by various committees for other enterprises.

Productive Projects (one unit each):

1. One sow and litter to marketing
2. Ten feeder pigs fed out to marketing

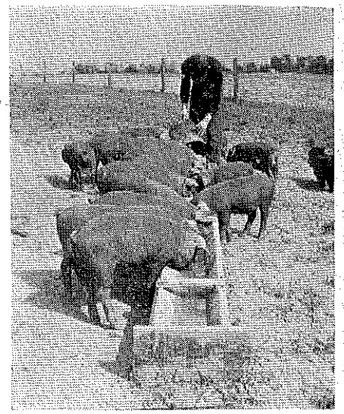
Other Supervised Practice (one-fourth unit each if the boy does not have productive project in swine enterprise):

1. Keep production records for Dad's herd
2. Castrate 10 pigs
3. Carry out sanitation program for Dad's herd
4. Construct hog feeder
5. Construct hog house
6. Treat 10 pigs for worms
7. Treat 10 pigs for worms
8. Fit two hogs for show
9. Construct creep

Treating pigs for roundworm

The term *productive project* is interpreted to mean a project that is managed entirely by the boy. The boy must make the decisions with the advice of his dad and instructor. The boy must own the business or be in partnership with his dad.

The term *other supervised practice* indicates that the boy is carrying on the practice but does not have financial interest or management of the entire enterprise.



Lynne Geigor and part of his herd of 60 purebred hogs

When making their lists of practices for each enterprise, the boys determined the *unit value* for each practice after considering the following factors: investments required, managerial ability required, amount of man labor required, rate of turnover, return to be expected, and amount of time under production.

After each practice for each enterprise is given a *unit value*, the class then decides how many units would constitute an average farming program for a freshman, sophomore, junior, and senior. The following table is set up by the class.

Before I go further let me explain that the "Unit System" is used only as a means of comparing programs. By using this system the boys are able to compare the size of their farming program with other members of the class. This "Unit System" becomes an evil if it is used to determine the credit received by the boy for his vocational agriculture course.

I realize that this system cannot be carried out in its entirety in every case. The farming programs of boys who live on small farms are quite often smaller than those of boys living on large farms, but such factors are taken into consideration.

Some teachers have expressed concern about the fact that some boys elect that the number of boys doing this can be kept to a minimum by taking the attitude that it is an opportunity to "earn and learn" by electing a larger program. Do not encourage the idea, "How many units do I have to elect?" Rather, "Considering my home conditions, what opportunities do I have to set up and carry out a program whereby I can earn money and grow into the business of farming while in school?"

Hold Parent-Son Meeting

During the entire period of setting up their programs the boys will constantly talk to their parents about their program for the coming year. As instructor I make many home calls during this period to answer questions, inventory the home conditions, and point out possible solutions to their problems. Before I have the boys make their final elections for the year, I have a meeting of all of the boys and their parents in the vocational agriculture room. At this meeting I have boys with outstanding programs give a brief review of their experiences and the benefits derived as a result of carrying out their programs, both from the managerial and financial aspects. I also explain to the parents the "unit system" as set up by the members of the class and answer all questions pertaining to their boy's program. I have found that approximately 75 percent of the parents attend such meetings. The success of this meeting depends upon the timeliness, the program for the evening, and the understanding existing between the parent, boy, and teacher prior to the meeting. This evening gathering must be held while the boys are talking about their prospective programs around the supper table. The program must be of such a nature that the parent will be both interested and educated. The parents must realize that you are a teacher in that school to *help* their boy and not to sell them a bill of goods.

Take Field Trips to Outstanding Programs

When the boys in the freshman-sophomore class are thinking and talking about their year's program, I find it very much worth while to take them on a field trip. I select two or three junior or senior boys' home farms for this trip. The boys whom we visit will have a program that is worth observing. I have the older boys explain their program and tell the class just how it was developed. I am always sure to have them include any difficulties which they might have encountered during its development. I find that freshmen are easily discouraged and I use this means of showing them that *it can be done* if they really make an effort. After this trip the boys are ready to set up their farming program for the following year.

Results Obtained by This System

I have followed this plan for the past six years. In the fall of 1939, I had the privilege of starting a new department in a new school district. They had never had a high school and consequently the vocational agriculture course was a new phase of work to the people in this community. By following this system of setting up farming programs, I found the results quite satisfying. The first year the

Instruction for Victory

T. M. OAKLEY, Teacher, Cleveland, Tennessee

IT HAS been the aim of the Department of Vocational Agriculture at Bradley Central High School to use its facilities and organization in the most efficient manner possible, in order to meet the national emergency from the viewpoint of the farmer.

The War Production Training Program which was formerly known as the O.S.Y. Defense Training Program is a practical and useful way in which to aid farmers and at the same time to offer training to rural youth in a technical and semi-technical manner.

Objectives of Course

The scarcity of farm labor and the general lack of knowledge to maintain, repair, and operate farm machinery have been definite handicaps in the battle for food production. This is true not only from the viewpoint of the farmer but also from the viewpoint of the manufacturer of war materials.

With these objectives in mind, the courses for instruction were organized. The O.S.Y. Programs were adapted to the needs of the community and the rural youth who were to participate in them. Consequently, 14 O.S.Y. schools have been operated in the school area with an approximate enrollment of 196 students.

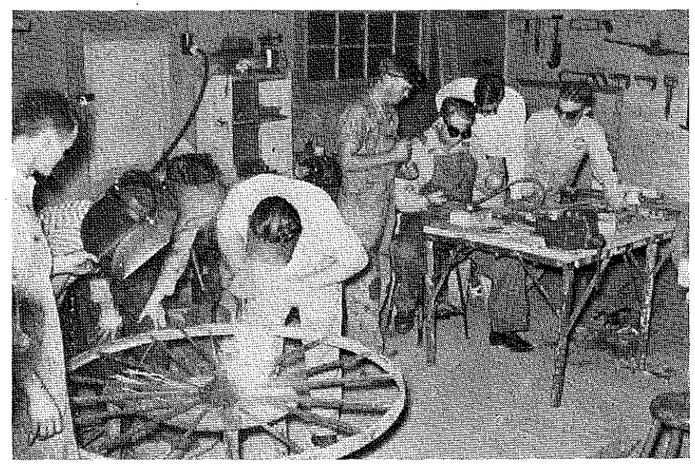
The County Board of Education was very fortunate in being able to employ capable and interested instructors. The courses consisted of the following:

1. Seven classes in metalwork, including repair and maintenance of farm machinery.
2. Four classes in care, operation, and repair of automobiles, trucks, and tractors.
3. One class in elementary electricity.
4. Two classes in wood work.

Interest ran high among the enrollees. It was not unusual for several to walk three miles for the class in the evening. Some were fortunate enough to own bicycles, while many came together in one automobile, having "pooled" their rides. A few came on horseback.

The interest of the boys was as varied as the number enrolled. It was evident, however, from the enrollment, that the classes in metalwork and the repair and maintenance of farm machinery were by far the most popular.

(Continued on page 98)



Welding was a popular part of the O.S.Y. training course

units and 1.7 other supervised practice. The following year the average was 2.89 productive units and 1.82 other supervised practice. The combined programs of all the boys resulted in a net return of $9,111.02 for the second year's work.

Sound farming programs can be arranged if there is a definite understanding between the parent, boy, and teacher. This understanding can be obtained by visiting the boy on his home farm during the summer and early fall. The parents will more thoroly understand the advantages of a sound farming program if they attend a meeting of the boys and their parents where these advantages and purposes are explained and discussed. The boy will be able to judge the size and scope of his program if the "Unit System" is used as a basis when electing his farming program. A field trip to study outstanding programs will always act as a stimulus to freshman and sophomore boys.

A Satisfactory Farming Program

Year in School	Productive Unit	Other Supervised Practice	Total
Freshman	1	½	1½
Sophomore	2	1	3
Junior	2½	1½	4
Senior	3	1½	4½

Farmer Classes

J. B. McCLELLAND

W. H. MARTIN

Experience With Defense Training Classes

OTTO W. PINO, Teacher, Clare, Michigan

WHAT have we learned thru the national O.S.Y. defense training program that is important to remember as we go forward with the war-work and food-for-freedom programs in our agricultural departments? This question is uppermost in the mind of the writer as he now returns to teaching after spending fourteen months supervising 41 classes on a country-wide basis in Bay County, Michigan. There were 25 teachers in this program, and 592 boys received training.

Class Attendance

Those of us who have taught part-time classes know that the boys who stick thru to the end are interested; that was the outstanding characteristic of the boys in national defense training classes. Boys are usually interested in hand work. One class was so interested that not even a street movie could lure them from their class work. Some boys drove 25 miles, missing classes only during bean harvest or in severe winter weather. Not only were students interested, but apparently they felt they needed the training in order to get jobs in factories and do repair work at home.

O.S.Y. Teachers

There seemed to be another factor that influenced the boys. These 25 teachers were all tradesmen who earned their living by the skill of their hands. Some had had special short courses in mechanics, a few of them had not gone beyond the eighth grade, and none had courses in methods. These teachers talked little and did not even demonstrate as much as seemed advisable, but somehow they showed the boys enough to get them busy at useful work, and the boys respected them. Some of the teachers were rather rough and when they told the boys to do something, there was no question about it. The boys did as they were told and liked the treatment. However, one teacher talked so much that the boys could not get their work done, which resulted in a poor class. Let that be a lesson to us.

In visiting classes, the state supervisors and I often talked over the difference between regular school classes and these defense classes. We knew the shortcomings of the defense classes, but somehow learning seemed to take place faster in the defense classes. These classes met for five hours at a stretch, with a fifteen minute intermission, yet often the boys wanted to begin work before the rest period was over. They had work to do and liked it. How can we get our vocational classes into such practical work? Should our regular classes meet for half day sessions instead of having a short

Another difference between the defense and the all-day classes is that there are no examinations and no written assignments in the former classes. The boys turn out the jobs under the direction of a teacher who knows his trade. They take their handiwork home where the family passes on the quality of work done. What can we do about such a standard of work and measurement in our all-day classes? If a boy can build a forge fire, does he have to pass a written test to prove that he can do it? Some boys leave regular school because they cannot pass paper tests. Can our teaching work be tested the practical way so that the boys will know by their products how well they have done?

These defense-class boys are at the right age, too. They have had some experience, not only at work, but in trying to get jobs without pre-employment training. How could high-school boys get some experience so that they could know what they are in school for?

Locating Prospective Students

A definite technique was used to locate boys for these classes. Rural school teachers and their eighth graders did a fine job of making a survey of their districts, listing the names of all boys 16 to 25 years of age, showing their age, address, parents' names, and working status, that is, working at home or away from home. They also made maps of their districts and showed where each boy lived. Forms were furnished the teachers for this survey. These out-of-school boys, with prospective teachers, were invited to meetings. Those who were interested in joining a class filled out cards and were later notified when arrangements had been made for the class to start.

Our classes were all held at the country crossroad or small town shops. We secured teachers who had large enough shop space and sufficient equipment to start a class. The state supplied the balance of the equipment.

Three teacher-trainer dinner meetings were held; one meeting was to give necessary instruction for the reports to be turned into the state office, one meeting was called to discuss instruction methods, and one to consider shop management problems. The teachers were very much interested and took an active part in the informal group meetings. There were also state and district conferences and talks with supervisors. These constituted the teacher-training program. Some of our state supervisors were always at our county conferences to help and advise. As a result, both shop work and instruction improved materially. The business methods required in these classes helped these tradesmen in their own business.

program. As we go forward in this war effort program, can we not bring many adults into an instructional program, and thru our supervision, make a significant contribution to adult education?

Credit Forms Used

In this program, credit forms were issued to each pupil, showing the number of hours he worked on each part of the course. For example, if a boy spent five hours grinding valves, that would be recorded on the credit card so that an employer could get an idea of how much training he had had in this 150 hour course. A chart was made for each boy, on which the major jobs were listed along the side, and across the top the dates were filled in by the boys. In the proper square on the chart the boy would record the time spent on each job during each class period. On the back of this sheet he wrote the big jobs he did in the course, such as overhauling a 1935 Ford motor. On this sheet was a place to record the time of reporting to and leaving class. This had to balance with the total job hours. At the end of the course the supervisor would add up the total hours for each job and make out the credit card. This procedure resulted in a picture of the spread of jobs done by each boy and helped him to see what jobs he had not done. What could be done in our all-day classes to help the boys to picture their progress?

Besides these individual record sheets, a class attendance chart was tacked up in each shop, and as each pupil came in, he placed a check after his name in the proper date column, using a blue pencil if he was prompt and red if late.

Guidance Stimulates Interest

Something should be said about the place of guidance in this program. If there is time much could be done. Some selective process is supposed to be followed. In Bay County, Michigan, vocational interest inventories and adjustment inventories were administered to one hundred boys. A simpler selective method, and the only one used as a regular procedure, was to make it clear that boys should not take the courses if they were not interested in them. To continue the selective process a form was gotten out by the Michigan Board of Control for Vocational Education, Form No. ND 944, to be used at intervals later in the course for a rating of each boy by the teacher on the following points:

1. Ability to get along with others
2. Does he listen carefully to instructions and then carry them out accurately?
3. Quantity of work done
4. Quality of work done
5. Knowledge of job
6. Judgment
7. Ability to learn
8. Dependability
9. Attendance
10. Summarize trainees' achievements

The rating was made by checking columns—very good, satisfactory, below average, unsatisfactory. This formed the basis for counseling any that seemed to need it. The card was explained to the boys at the organization meeting of the class, and it stimulated a good attitude. Could this be used with our all-day classes?

Classes Are Scored

Another device that proved useful was a score card, in which the pupils and teacher would score their own classes. Each item is worth ten points; one point is taken off for each pupil delinquent in the first six items, and the rest are scored from one to 10 percent. These are the items:

1. Do students come to class on time?
2. Do boys check their attendance record when they come to class?
3. Total number of students present
4. Are all students busy?
5. Do students leave tools clean, in good condition, and in proper place?
6. Do students clean shop at end of class?
7. Do the students co-operate with the teacher in planning what to do at the beginning of the class?
8. Do the students co-operate with the teacher in learning how to do their work?
9. Are the students and teacher friendly and patient with each other?
10. Do the students and teacher close the class by planning work for the next class before they leave?

Not only did the boys score their own class but we arranged for two boys taking the same course from each class to score one other class. This was very stimulating and the boys tried to improve their own classes. As a further guidance procedure the boys were assisted in enrolling in the Federal Employment Office.

Correlating Programs

A question has been raised about correlating defense classes with part-time classes this year. It seems to me that the only way to arrive at a decision about any of these classes is to get a local council working on agricultural problems for the community to determine the general needs. Thru a survey, determine the available people, young and old, who are in the community; call meetings, discuss the findings of the council, and proceed to organize the proper classes. Some agricultural classes are not considered in the defense program. Farm management and soils are both basic courses that would have to be administered under the Smith-Hughes Law, but certain production courses will be defense classes under the 1942–43 plans.

I think it is evident in this discussion that there is a big public relations job ahead of us. We all know that this phase of the work is very important. The public must be informed as to what is going on, not only from the public support point of view, but also in order to let people know of the opportunities at hand. There is one detail we should not overlook in our relationship with others. Let us assist those who are working with us to the limit of our time and energy and let us inform them of our sincere appreciation for their efforts. Mistakes will be made, vital information will be lacking at times, but close co-operation will pro-

Can an Adult School Succeed in My Community?

KEITH McGUIRE, Teacher, Forreston, Illinois

CAN an adult evening school succeed in my community? This is the first question which most teachers of vocational agriculture ask before making a final decision as to whether or not to initiate an evening-school program. More teachers would hold evening schools if they were positive of their success. The evening school presents a direct challenge to the teacher of vocational agriculture. What are some prerequisites for success for an evening school?

Requirements for a Good Class

After five years of successful evening-school work at Forreston I believe the following are necessary for success:

In the first place, a survey of the community must be made to see what improvements in farming practices should be made and how the evening school can serve as the medium for those improvements. Contacts with key farmers must be made and their honest opinion obtained on whether or not they feel that an evening school has a place in the community.

Community Council

If the farmers feel that an evening school would be helpful, the next step would be to set up an evening school council. The Board of Education must first give its blessing to the school before the farmers are contacted. This council may consist of from five to twelve or more farmers, depending upon the size of the community. It is a good idea for a member of the Board of Education and the high-school superintendent to serve as ex officio members. The membership of the council should be well distributed over the district, geographically. Diverse political and religious groups must be included. Tenants as well as landowners must be on the council. No clique or group must have any special advantage. If two or more farm organizations are prominent in the community, both must be represented. After the first year, those who attend evening school should elect the members of the council. We have twelve members and the high-school superintendent on the council. Every year, four members retire and new ones are elected.

Give your council some authority and a job to do. The members will not know what their responsibility is unless you tell them. The agriculture teacher should not try to run the whole show. Make them feel responsible for the success or failure of the whole thing.

Our council is organized and the chairman opens and closes every meeting. Our secretary calls the roll and keeps an accurate record of attendance. The members first decide which topics they want discussed the following year, and the council takes final action upon them.

Good Programs

The third requirement for success is the presentation of a worth-while program. least ten sessions must be held for each school. Too many teachers let the minimum become the maximum. The meetings must be interesting. The farmers should do most of the talking, the agriculture teacher serving as intermediary directing the discussion to keep it on the subject. Everyone must have a right to express his opinion. The agriculture teacher should be in a position to answer many of the questions which would require information from state experiment stations. It is a good idea to start and close the meetings on time. The ten or more lessons should be unified, that is, be on one general theme, such as animal husbandry, soils and crops, etc.

Teaching Methods

Do not lecture to the class. It is a good idea to have outsiders come in and lead the discussion occasionally. Have a good movie on some farm subject. Select four or five members from the group and work up a round table discussion on some phase of farming. Obtain some recorded information from the farmers, put it on the board, and discuss it. Visit the farmers any time during the year. Let them know that you are willing to help them with any problems which you can. Encourage them in their programs of supervised farm practice. During the presentation of the lesson, do not become technical; keep the discussion practical.

I have listed some things which I think should contribute toward the success of an evening school. The next question many teachers would ask is: What values might come from holding a successful evening school?

Value of Evening Classes

The evening school is one organization for farmers that cuts across all barriers of religion, politics, and other groups. If it is effective, the evening school in any community is the "voice of agriculture" in that community. All farmers feel that they can belong regardless of status.

Farmers can receive information which they put into practice on their farms and thus increase their cash income. The purpose of an evening school is to discuss problems in connection with some phase of farming and to show how to eliminate the hazards and make more profit.

There is much to gain from a social standpoint when groups of the same vocation get together to discuss their problems. Farmers learn to express their opinions in public and have them subjected to public opinion. It is the "democratic way of life" in action. Everyone can express his opinion, and if it is radical, the rest of the group will soon set him right. Farmers who have no children in high school can feel that they are getting a definite value from their high-school tax.

The vocational agriculture teacher is recognized as the trained agriculture authority in the community. A successful evening school gives the teacher of agriculture more prestige in the community

Farm Mechanics

L. B. POLLOM

Executing a Farm-Machinery Repair Program

GLENN BRESSLER, Teacher, Hollidaysburg, Pennsylvania

TEACHERS of agriculture have never before experienced an opportunity for rendering community service such as has been brought about by this war emergency. Never since the passage of the Smith-Hughes Act has vocational training in agriculture been challenged as it is today. The Act providing for vocational training in agriculture was passed during World War I because the American people definitely realized the need for this type of training in the public schools of our rural communities. This need has been met in a greater sense than was actually anticipated by the American public. In view of this splendid record, teachers of agriculture are asked to serve a more pressing need by helping to meet the endless challenges brought about by the emergency of World War II.

Agricultural programs in rural communities have been functional because they were able to throw off the cloak of traditional instruction and adapt their program to meet community needs. Strong vocational agriculture departments are found in those communities where the teacher has developed a flexible program. Programs of vocational agriculture must be changed to meet this emergency even at the expense of curtailing some phases of the present program.

How to Meet the Challenge

Some teachers of agriculture are hesitant in organizing classes for repairing farm machinery. This may be due to the lack of confidence as an instructor; it may be due to the lack of sufficient shop space and equipment; or the teacher may not be willing to take the responsibility for bringing farm machinery into the shop. When this emergency arose, the writer was rather dubious about starting such classes. He had never conducted a class in farm-machinery repair nor did he have an undergraduate course in farm-machinery repair; shop facilities were limited by virtue of the fact that a total of 150 industrial arts pupils used the same shop four days a week; and lastly, he was concerned whether farm people would be willing to bring farm machinery into the shop (if facilities could be provided). In spite of these drawbacks, the writer felt that the emergency must be met. He felt that the repair of farm machinery was a real need of the farmer and recognized the fact that no other agency was in a better position to do the job than the vocational agriculture department.

Farm Machinery Repaired

Excuses for not conducting classes in farm-machinery repair became rather ence in providing instruction. Willingness to exert energy will do much to overcome so-called difficulties. Courses were organized for all-day pupils, young farmers, and O.S.Y. groups. Accomplishments of these groups included the repair of two corn planters, one spring-tooth harrow, two grain drills, two riding cultivators, two walking cultivators, three mowing machines, and two disk harrows. The number of machines repaired does not seem large, but a summary of the jobs actually done on these machines will add greater significance to the accomplishments of these courses.

Jobs done on respective machines:

Corn planters

1. Built up worn axles with oxyacetylene torch
2. Cleaned rusty gears and movable parts
3. Welded throw-gear for fertilizer attachment
4. Straightened crooked wheel
5. Made two fertilizer boxes out of tin
6. Made two singletrees
7. Painted the machines

Spring-tooth harrow

1. Made new runners
2. Adjusted teeth for depth
3. Replaced worn bolts
4. Built up connecting swivels
5. Painted the machine

Grain drills

1. Tore down drill completely to clean rust out of fertilizer units
2. Replaced four fertilizer units
3. Built up axles on both drills
4. Replaced dogs in one drill with gas torch
6. Welded lifting attachment
7. Replaced all fertilizer units in one drill
8. Repaired feed tubes with new leather straps
9. Painted the machines
10. Lubricated the machines

Riding cultivators

1. Cleaned all rust
2. Repaired three broken wheels
3. Built up worn axles
4. Replaced worn bolts
5. Made new cultivator shields
6. Made two single-trees
7. Made one double tree
8. Made one tongue
9. Replaced one set of shovels
10. Painted the machines

Walking cultivators

1. Replaced shovels
2. Made new handles
3. Replaced worn bolts
4. Painted the machines

Mowing machines

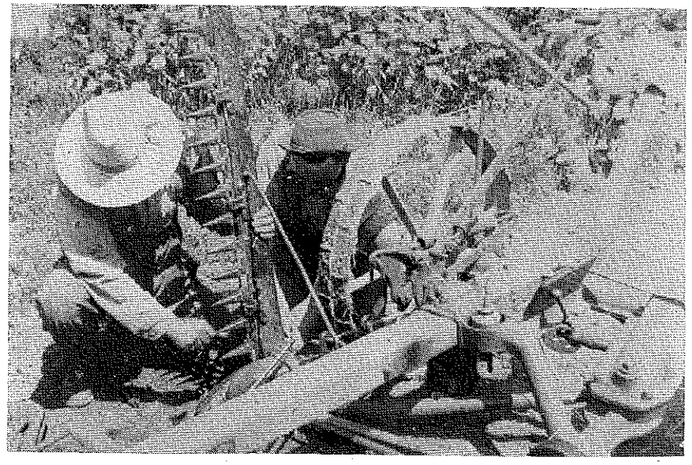
1. Built up axles
2. Built up treads on wheels
3. Replaced two drive gears
4. Replaced one thrust gear
5. Replaced one pitman box
6. Replaced one set of roller bearings
7. Replaced half the number of guards and guard plates
8. Replaced worn clips
9. Replaced knife plates
10. Built up inner and outer shoes
11. Replaced one set of dogs
12. Took up lag on all machines
13. Adjusted machines for register
14. Sharpened knives
15. Made two new swathe boards
16. Lubricated the machines
17. Painted the machines

Disk harrows

1. Replaced wood bearings
2. Built up metal boxings
3. Replaced worn bolts
4. Tightened bolts
5. Repaired tractor hitch
6. Lubricated the machine

Other jobs done

1. Repaired manure spreader wheels
2. Built up binder gears
3. Welded broken cylinder head in gas engine
4. Built up gears on corn planter fertilizer feed



A young farmer checks mowing machine for loose parts

How Difficulties Were Overcome

Our program was organized on the basis of three groups, the all-day, the O. S. Y., and the young-farmer group. The writer supervised all three groups and taught the all-day boys and the young-farmer group. Two tradesmen were hired to teach the O.S.Y. national defense training group. These men were experts in oxyacetylene and arc welding as well as blacksmithing. With the services of these two experts and the writer's general knowledge of farm mechanics and skill in the use of farm tools, the problem of instruction was solved. Commercial representatives, extension specialists, and itinerant teacher-trainers as well as reference books and bulletins were utilized fully as aids in carrying out the program.

It is common to find farm shops inadequate in tools, floor space, and accessibility. Our shop, while adequately equipped and located on the ground level and accessible thru a double door, is definitely lacking in floor space for handling farm machinery. Many school shops are lacking in some respect or are overcrowded, but there is generally a way out. Our problem was solved by bringing the machinery from the farm, dismantling it in the shop, and placing it in a large corridor next to the shop. This corridor is 12 feet wide and 125 feet long. As many as eight machines were being repaired at one time in this large corridor.

Organizing the Groups

In launching any new program connected with vocational agriculture, the writer feels that the all-day group is the most logical group with which to start. By getting the support of this group the enrolling of other groups is simplified. By following that procedure in the case of planning the farm-machinery repair courses, much enthusiasm was aroused among not only the all-day group but also the out-of-school youth and adult farmers. The procedure followed was that of giving instruction to sophomores and juniors during their regular shop period which amounted to one hour and 50 minutes each week. The regularly planned classroom instruction for seniors was discontinued and full time given to the repair of farm machinery.

In organizing the out-of-school groups the all-day pupils helped considerably in giving publicity to the program and in obtaining the enrollment for the courses. The out-of-school youth group fell into two categories. One group was interested in enrolling for the national defense training course in general metalwork which included the repair of farm machinery. This course met four nights a week for a total of 15 hours each week. The other group of farm boys was not

a large number of hours each week, but they were desirous of having instruction in farm machinery repair. This latter group was then organized as a young-farmer class and met one night a week for a period of 10 weeks.

Providing instruction to these three groups, of course, did not serve all the farmers in the community. It is worthy to note, however, that maximum use was made of the shop facilities available in the school, not only during the day but every night in the week.

Obtaining Farm Machinery for Repair

The matter of obtaining machines for repair required surprisingly little effort. With the help of a few news articles and the enthusiasm of the boys enrolled in the various courses more than enough farm machines were brought to the school shop for repair. By visiting the farms and observing the condition of the machinery, one has little trouble in finding jobs to do. On one of these visits to the home of a senior boy arrangements were made with his dad to bring to the school one grain drill, one two-horse walking cultivator, one mowing machine, and one corn planter. Some of these machines were no longer in use and others were operating very poorly. The day when this machinery arrived seniors were attending their regularly scheduled class in agriculture. Instruction ceased when the truck came to the outside of the classroom. "Let's get out and unload that pile of junk," was one remark heard in the room. Class disbanded and the machinery was unloaded, dismantled, and placed in the corridor. The boys were anxious to get started. They had a vision that this so-called pile of junk could be repaired, thereby saving money for the farmer. At the same time they were meeting a need during this war emergency. Yet the writer was still concerned about the teaching values. Will the repair of this machinery impress upon the boy and his dad the fact that machinery must be constantly cared for and maintained? Without attaining this objective the teaching program would fail. With this idea in mind we launched into the program. The matter of obtaining machines was no trouble whatsoever, for after work had gone along for a few days one request after another came from all-day boys and young and adult farmers. As one machine was completed another one was brought in.

Teaching Methods

Instruction was given in a very informal manner for both the all-day and the young-farmer groups. In the O.S.Y. group, instructors were able to give more demonstrations and to give more close supervision to individuals than was the case in the other groups. Boys were assigned into groups of three or four. It was the responsibility of each group to check the machine for needed repair parts, completely overhaul the machine, replace worn parts, adjust, paint, and lubricate the machine.

It was the job of the instructor to advise each group on a plan of procedure for doing the necessary jobs. This required his becoming thoroly acquainted with the working relationships of each machine before the class met. The matter of analyzing the farm shop jobs on out-

under any circumstances. Jobs which required the skill of an expert mechanic such as building up bearings and axles with the oxyacetylene blow torch or arc welder were left to the young men in the national defense training classes. Under the careful supervision of the skilled mechanics the jobs made excellent practice exercises for the application of welding principles. Pupils were responsible for repairing a specific machine, which resulted in excellent workmanship. Each group tried to outdo the other. It was required that each boy analyze the working relationships of the machine. Only by following this procedure were the boys and young farmers able to learn the principles of operation in each machine and how repairs must be made. It is this type of training that we as teachers are interested in rather than the newly repaired and painted machine.

Follow-up Program Necessary

Insofar as the repaired machinery is concerned as a product of the farm shop, the real truth is not told until after the farmer puts the machine into use and finds it to work satisfactorily. The writer took his group of seniors to the farm where the first load of machinery was obtained. The machinery had been overhauled and returned to the farm. On this particular occasion the farmer was trying out the grain drill which the boys had repaired. He greeted us with a smile and could hardly wait until we came within talking distance for him to express his appreciation for the excellent job that had been done. While passing this farm on later occasions, the writer finds those newly overhauled and painted machines under cover and not sitting out behind the barn to rust, as was previously the case. This boy and his dad have learned the lesson of caring for machinery.

The product of the school shop in the form of repaired farm machinery was an excellent one. However, the product of our teaching, which is the boy or young farmer, is the most important phase of the farm-machinery repair program and must be our greatest concern.

Conclusions

Teachers of agriculture can meet the challenges of this war emergency. Confidence in themselves, a plan, and the execution of the plan will win the ultimate goal. A well-conducted farm-machinery repair program is a splendid example of one type of service that can be rendered in meeting this emergency. It is believed that the following benefits were derived from this program:

1. A distinct contribution was made to the total war effort both thru reclaiming discarded farm machines and repairing and increasing the efficiency of machines which were in use.
2. A better farm-machinery maintenance program was established. While only a small portion of farm machines were brought to the school shop, farmers in general were made to realize the need for and the value of good machinery practices on their part.
3. The training given all-day boys and young farmers developed their skill and judgment in managing mechanical equipment on their farms.
4. An increased possibility for greater community service by the vocational

Studies and Investigations

C. S. ANDERSON

The Montana Farm Shop Program*

W. J. WELKER, Montana State College

W. J. Welker

IN A previous article we noted some of the factors that seemed to limit the carry-over of our farm shop instruction to the home farms of our vocational agricultural students. The factors centered around (1) the small number of farm shop jobs that students bring from their home farms to the school shop, (2) the everyday work of the students' home farms requiring the students to do many more jobs and different types of farm shop jobs than we teach in the school shop, and (3) the use of much of the student's school shop time in doing exercises and shop work for school patrons.

Let us now see how the students learn to do the mechanical jobs performed at home, what kind of home-farm shops and shop equipment are available for doing these jobs, what efforts our students make to provide and maintain home-farm shop facilities, and how these relate to carry-over.

How Students Learned to Do Farm Shop Jobs

After the students that were co-operating in this study had indicated the farm shop jobs done at home, they were asked to answer four questions relative to how they learned to do these jobs. An examination of Table IV throws some light on this problem.

It is quite significant to note that Father is still the most important single teacher. The boys claim that their fathers taught them to do 42 percent of the jobs they now do (Question III, Table IV). When the boys indicated that more than one factor had been influential in their learning to do jobs, the father's influence was often noted as one of the factors. One may be inclined to believe that the 16 percent of the jobs taught by the instructor (Question I) is much smaller than it should be. However, it must be reiterated that students are at home much more of the time than they are in school. In defense of the instructors, it should also be stated that they have many other phases of vocational agriculture to teach besides farm shop. These factors may in part account for the seemingly low percentage.

The very low percentage (6 percent) of home-farm shop jobs supervised by the instructors (Question II, Table IV) is supported by statements made by the instructors themselves. In referring to the amount of home supervision several of the instructors remarked, "You won't find is relatively significant as a point from which to initiate a home-farm shop improvement program.

Home-Farm Shop Facilities

It might be expected that vocational agriculture students would have reasonably adequate shop facilities at home in view of the large number of home-farm shop jobs they do. We may get the true answer to this by making a study of Table V. Approximately 18 percent of the vocational agriculture students studied do not have access to a shop. Another 26.4 percent have access to a farm shop with less than 100 square feet of floor space. This writer believes that a home-farm shop that is smaller than 14 feet by 16 feet or approximately 200 square feet of floor space is inadequate to care for the shop needs of most farms. A larger amount of floor space is preferable.

Only 45 percent of the students reported a farm shop with a door large enough for a car, tractor, or truck to be taken into the shop. A total of 78.6 percent of the shops were unheated and unsuited for use in severe weather. According to vocational agriculture students, 40 percent of the home-farm shops are inadequately lighted for use during the day.

It is surprising that vocational agriculture students are able to do as many jobs at home as they do. The problems of size, lack of heating facilities, and inadequate light present a worth-while challenge for those who are charged with the responsibility of improving the home-farm shop program.

The data in Table V pertaining to

Table IV. Method by Which 112 Montana Junior and Senior Vocational Agriculture Students Indicated They Learned to Do 3,354 Farm Shop Jobs They Did at Home—1940-41

Sources of Help or Supervision on Jobs	Farm Shop Jobs Completed at Home	
	Number of Jobs	Percent of Jobs
Question I What farm shop jobs do you do at home that you could not do before you took vocational agriculture?	537	16
Question II What farm shop jobs has your instructor helped you with or given you supervision at your home?	201	6
Question III What farm shop jobs has your father taught you?	1,415	42
Question IV What farm shop jobs do you do at home that you learned to do without assistance from anyone?	606	18
Combinations of markings in which markings of Question II appeared. (Jobs in which the instructor gave partial supervision or help.)	265	8
Other combination markings. (Jobs in which instructor gave no assistance.)	330	10

Table VII. Number of Vocational Agriculture Students Who Have Made Improvements in Their Home-Farm Shop While Enrolled in High School

Improvement Job	Number of Students Completing Jobs	Percent of Students Completing Jobs
1. Plan a home-farm shop	17	15.2
2. Construct or prepare a building for shop	17	15.2
3. Provide storage space for tools	54	48.2
4. Provide storage space for screws, nails, bolts, etc.	57	50.9
5. Construct a workbench	26	23.1
6. Install a shop vise	21	18.8
7. Construct anvil of heavy iron	10	8.9
8. Construct anvil base	14	12.5
9. Construct or install forge	7	6.3
10. Construct or install shop stove	8	7.1
11. Provide storage space for lumber and iron	25	22.2
12. Install emery wheel or grindstone	26	23.1
13. Improve shop floor	18	16.1
14. Clean the shop once each month	44	39.3

Table V. The Home-Farm Shop Facilities Available to 112 Junior and Senior Students of Montana—1940-41

Shop Factors	Number of Students Rating Factors	Percent of Students Rating Factors
I. Size (floor space)		
A. 400 sq. ft. and over	14	13.2
B. 399 sq. ft. to 250 sq. ft.	15	14.2
C. 249 sq. ft. to 100 sq. ft.	30	28.3
D. Less than 100 sq. ft.	28	26.4
E. No shop	19	17.9
II. Location		
A. Separate building or separate space with tractor and truck driveway into shop	9	8.6
B. Shop space used partly by garage or other use. Has a tractor and truck door	39	36.7
C. Separate building or separate space. Has small door	22	20.7
D. Shop space used for other purposes. Has small door	19	17.9
E. No shop	17	16.1
III. Heat		
A. Heated by stove; suitable for use in severe weather	19	21.4
B. Unsuitable for use in severe weather	70	78.6
IV. Light		
A. Artificial light plus glass windows	22	23.6
B. Shop adequately lighted by glass windows only	35	37.6
C. Shop inadequately lighted; workbench adequately lighted	22	23.6
D. No artificial light; no windows	14	15.2
V. Floor		
A. Concrete and wood	6	6.6
B. Concrete only	9	9.9
C. Wood	34	37.3
D. Dirt	39	42.5
E. Combination of two of above	3	3.1
VI. Tool Storage		
A. Tools re-stored in cabinet	6	6.6
B. Tools hung in open on wall	21	22.4
C. Tools lay on bench or shelf	12	12.8
D. Tools are kept in more than one place on farm	23	13.8
E. Tools are not stored	4	4.3
F. Combination of two of above	30	31.9
G. Combination of three of above	7	7.4
VII. Lumber and Iron Storage Facilities		
A. Stored on wall rack	3	3.1
B. Stored on ceiling joists or in corner	20	20.4
C. Stored on floor	13	13.3
D. Stored in piles outside shop	34	34.7
E. Not stored	18	18.3
F. Combination of two of above	10	10.1
G. Combination of three of above	4	4.3
VIII. Storage Facilities for Nails, Bolts, Screws		
A. Bins or cans for common sizes of each	59	58.4
B. All sizes of each in one bin or can	28	27.8
C. Not stored	14	18.8
D. Combinations of two of above	1	1.0

storage of tools, lumber, iron, nails, bolts, and the like, are not in themselves conclusive evidence that these supplies are not well stored. The writer has often observed farm shops in which tools were not put away, and piles of lumber and iron poorly stored on various parts of the farmstead. These piles are, in reality, junk and have little value as such. These data and other observations lead to the belief that there is much room for improvement in the storage of farm shop tools and supplies. This is especially true in respect to used supplies such as lumber, iron, bolts, leather, and other miscellaneous supplies.

ties are inadequate, the farm shop tool situation seems to be more adequate (see Table VI). Approximately one-third of the farm shops are without vises. There are a few other essential tools lacking in the Montana home-farm shops, such as forges, post drills, twist drills, and stocks and dies. With the few exceptions noted it may be stated that these vocational agriculture students do not lack many home-farm shop tools with which to work.

It has been shown that there is room for improvement in the home-farm shop facilities. Paralleling this we may note Table VII, indicating that an adequate

The Food Supply and Prices

(Continued from page 85)

the legal formula be revised to include all farm costs, including labor. Farm products are almost the only war necessity not covered by government contracts at cost plus. Farmers must compete with industry for labor. In spite of the publicity regarding stabilization of wages, this has not yet occurred. This is not merely the farmers' problem. It is the nation's welfare that is at stake. We must not fail, for we are the last resort of our allies for food as well as for munitions.

Ceilings on farm prices should not be placed at levels that will result in less than full production of all essential foods. The real job is to win the war and prevent, if we can, unnecessary price rises. Farmers are going to do their utmost, whatever action is taken by Congress on price ceilings, but their utmost may not be enough if low prices are established which would prevent them from retaining enough labor to do the job.

Looking at this war period as compared with the last, I think we should remind ourselves that we have several great advantages at the present time. First is the fact that we have our great agricultural education system: agricultural teachers, home and county agents. A second great advantage is that we have better research facilities for meeting and solving wartime problems. A third is that we have more and more efficient farmer co-operatives. Co-operatives have been rendering a magnificent service in these times of rapidly changing conditions. They have been helpful in keeping milk prices in adjustment with costs. They have provided balanced rations at lowest possible cost thru the use of relatively cheap ingredients. They have obtained used and new packages for use when and where needed. They have made satisfactory substitute spray materials available when the usual ones became unavailable.

Conclusion

In conclusion, I would like to leave with you three responsibilities that go with the opportunities that you and I have in agricultural work. First, I think it is our duty to inform city people of the facts of the farm price problem and to try to correct their misapprehensions and their unfair criticisms. Second, we must do our job to help farmers to meet their responsibilities in the Food for Victory program. Third, we must do our duty as individual citizens in living up to restrictions and in helping to finance the war effort.

Great crises bring great problems and equally great opportunities. The really patriotic person, teacher or farmer, is one who does his job to the utmost of his ability and a little bit better than ever before.

The requirements of a good farmer are at least four: the ability to make a full and comfortable living from the land; to rear a family carefully and well; to be of good service to the community; to leave the farm more productive than it was when he took it. (From title page of Warren's Farm Management.)—Liberty Hyde Bailey

Future Farmers of America

A. W. TENNEY

Future Farmers Sponsor Potato Improvement Program

CLARENCE E. BUNDY, Teacher, Iowa Falls, Iowa

THE members of the Future Farmer Chapter at Iowa Falls, Iowa, have for several years sponsored a potato improvement program. Each year the program grows in size and reaches a few more farm families. This year the 71 chapter members have sponsored a co-operative program which has involved a few over 400 farm families and the purchase of 820 cwt. of northern grown, certified seed potatoes.

C. E. Bundy

Co-operative Program

The potato crop in the Iowa Falls area is not a major crop. As a matter of fact the acreage of potatoes and the quantity sold as a cash crop is and has been comparatively small. The continued use of traditional and antiquated methods of production, and the practice of planting locally raised seed have resulted in the production of potatoes of poor quality and low yields. The members of the local chapter believe, however, that every farm family can produce sufficient potatoes of desired quality for family use and by use of up-to-date methods can even compete with the potato growing areas in supplying the market with early potatoes.

Since the co-operative program began six years ago, there has been a marked increase in the quantity of potatoes grown and in the quality of the crop produced. Many farmers who had given up in their attempt to raise potatoes and were buying potatoes for table use are now raising more potatoes than are needed by their families. Local grocers are beginning to rely upon our chapter members and co-operators for their supplies of retail potatoes.

The Iowa Falls potato improvement project involves a testing program, an educational program, a co-operative seed potato purchase project, and a co-operative seed treating project.

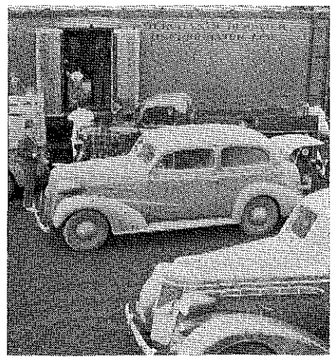
Testing Program

The chapter sponsors each year a test plot to determine and demonstrate the best varieties to grow, the best piece size to plant, the value of seed treatment, the effectiveness of commercial fertilizers, and the distance apart the pieces should be planted in the rows and space between rows. The results of the testing paper and a mimeographed copy is made available to all co-operators. The test plots are usually conducted by chapter members as a part of their regular individual farming programs.

The results of the tests have done much to improve the methods used by local farmers in growing potatoes. In the 1941 tests the Cobbler variety surpassed all other varieties in yield by 26 bushels per acre. This spring farmers wanted Cobbler seed potatoes. The tests last year showed that seed treatment resulted in an increase in yield of nearly 34 bushels per acre. There was much more treating done this year. The seed cut 10 pieces to the pound resulted in a yield of 297 bushels per acre while the seed, cut 16 pieces to the pound, yielded 237 bushels per acre. Farmers now are planting larger seed pieces. The use of 0-20-0 and 6-12-4 commercial fertilizers showed marked increases in yields, and more fertilizer is being used this year. The value of proper spacing was demonstrated, and this year more growers planted their potatoes a foot apart in rows spaced 30 to 36 inches apart.

Educational Program

In addition to the publicized reports of the test plot results, the chapter members prepare and distribute to all co-operators a mimeographed sheet listing the most effective and profitable methods of potato production. We find that the co-operators are very desirous of this information and there is definite evidence that they use the information in growing their potatoes.

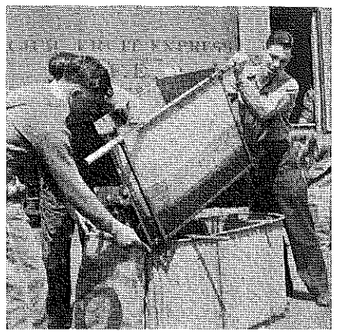


Co-operators call at the cars for seed potatoes

Co-operative Purchase of Seed Potatoes

The chapter members sponsored the They pooled their own orders and invited neighbors to buy their seed co-operatively. A simple contract was used which described the quantity and quality of potatoes desired, the time of arrival, and the price to be paid. The contracts were signed and a deposit of 40 cents per cwt. was made by the co-operator. The chapter committee placed an order for the potatoes with the growers at Park River, North Dakota. The potatoes have usually come from members of the Future Farmer Chapter at Park River. The quality of the potatoes purchased has been very excellent, and one crop grown usually results in a steady co-operator, and in many cases neighbors have requested contracts.

Only certified seed potatoes have been ordered. The chapter program this year involved 466 cwt. of Cobblers, 292 cwt.



Chapter members treating potatoes

of Ohios, and 62 cwt. of Chippewas, Warbas, and Houmas. The latter potatoes are grown experimentally.

The chapter makes a handling charge and the treasury netted $190 as a result of the project this year. The charge has varied from year to year from 10 cents per cwt. to 25 cents depending upon the price of the potatoes. Usually the price of certified seed delivered at Iowa Falls has been little higher than the price of eating potatoes at the local grocery stores.

The potatoes are shipped by rail the first week of April and the co-operators call at the cars for them. The chapter members are very busy unloading the cars, and it is quite a sight to see 400 co-operators calling at the cars for their seed. Often there is a line of cars and trucks a block long.

Seed-Treating Program

The results of tests involving seed treatment have encouraged growers to treat their seed. As a service project the chapter constructed a treating vat in which 100 pounds of potatoes may be treated at a time. Chapter members treat potatoes for co-operators at the car and a charge of 10 cents per cwt. is made. A solution of Semesan Bel is used and after paying all expenses the chapter

sack treated. This year 426 sacks were treated. Many co-operators wanted their seed treated but did not have time to wait their turn.

Community Service Value of Project

The potato improvement program has reached more farmers than any other project sponsored by the chapter or by the vocational agriculture department of the school. The co-operators are "sold" on the use of certified, northern-grown seed and on the use of improved cultural methods. Financially the project has resulted in farm income increases which over a period of years add up to a large figure.

The project has been of great value to the F.F.A. members. They have received business experience, experience in working together, in developing leadership, and have learned much more about the growing of potatoes than they could have learned by use of the traditional teaching procedures. The income from the project has provided funds for chapter undertakings. From an adviser's standpoint, the project serves effectively as a teaching device.

Can an Adult School Succeed in My Community?

(Continued from pag 91)

because he teaches not only boys but also their fathers many things which they never knew before.

Summary Statement

Now for a brief resume of the five years of adult evening-school work at Forreston, Illinois. I had the privilege of introducing vocational agriculture into the high school five years ago. We had an evening school the first year and have had one each year since.

A council of 12 farmers was selected the first year. The high-school superintendent serves on the council ex officio. A high-school board member was also on the council each year.

At the conclusion of each meeting a sheet of improved practices discussed in the meetings was passed out to each farmer to fill out. The agriculture teacher tried to visit most of the farmers before the next evening school to see how they were getting along.

Our evening school has improved from year to year and the interest and enthusiasm are still high after five years. Our average attendance for the ten meetings for the past five years is as follows:

1938	47
1939	70
1940	83
1941	87
1942	87

Our attendance at our annual F.F.A. banquet parallels that of our evening school. That attendance has been as follows:

1938	70
1939	105
1940	196
1941	200
1942	275

For the past three years, the meetings have averaged two hours and three min-

Future Farmers and the War Effort

R. L. CUNNINGHAM, Instructor, Bradenton, Florida

IN THIS time of national emergency the Bradenton chapter of the Future Farmers of America has not been standing idle. The members of this chapter believe in doing their share. Each individual has bought some War Stamps, while the chapter has bought bonds and stamps. In co-operation with the girls in home economics they have made 50 stretchers, which have saved the Local Defense Unit the amount of $300. They are making 50 model airplanes which will be turned over to the Government for training aircraft spotters. The farm shop is also being used to repair farm machinery and building equipment for farm livestock, such as brooders for chickens, feed troughs, mineral boxes, etc.

Each member has a home garden which will release more food for defense, besides saving the family money. They are also collecting scrap iron, which will be turned over to the Government.

The productive programs this year are centered around food for victory: namely, poultry, dairy, and pork products. Poultry culling rings have been formed for nearly all the communities represented by chapter members. The boys in these rings are trained in culling hens for egg production and are at the service of the people of their respective communities.

Girls working for defense

Book Review

Animal Sanitation and Disease Control, R. R. Dykstra, Dean School of Veterinary Medicine, Kansas State College. 558 pp., illustrated, published by The Interstate Publishing Co., list price $2.85.

The text is divided into 11 parts and 51 chapters according to subject matter. Some of the typical chapter headings are: Vitamins and Minerals as Health Requirements; Community Sales, Community Sires, and Transit Losses; Guides in the Selection of Chemical Disinfectants; Repelling External Parasites; Imaginary Ailments; Plant, Food, and Chemical Poisonings; Deficiency Ailments; Infectious Ailments; Contagious or Communicable Ailments; Control of Poultry Ailments; Artificial Feeding of Orphaned Animals; Animal "Conditioners" and "Tonics"; Artificial Insemination; The Sound and the Unsound Horse. These titles are indicative of the breadth of information contained in the text.

More than 1200 items having to do with animal sanitation and disease control are discussed in this book. Whether the student, teacher, or animal producer is interested in finding information concerning "hollow-horn," "wolf-in-the-tail," in the realm of imaginary ailments; or is interested in learning symptoms, cause and recommended practices concerning "Scratches," "Thrush," "Trembles," "Moon-blindness of Horses," and "Crazy-chick disease" in the realm of actual ailments, the alphabetized index will enable one to find the information desired. The chapter on Animal "Conditioners" and "Tonics," if studied and applied, would result in the saving of thousands of dollars annually.

Prevention of animal ill-health is of far greater value than cure. The wealth of timely advice contained in this book, if followed, will result in the conservation of our livestock industry. This book should prove helpful to the teacher of vocational agriculture, the county agent, and the livestock producer.—A.P.D.

Book Review

Field Crops Management, by E. N. Fergus & Carsie Hammonds. 600 pp. 175 illustrations, published by J. B. Lippincott Co., list price $2.40. All of the important crops and groups of crops in the country except cotton are discussed. The subject matter is organized into 10 chapters. Each chapter covers an entire enterprise or subject. The chapters, therefore, may be presented in any order desired. Suggested activities and questions are listed at the end of each chapter.—A.P.D.

The Montana Farm Shop Program

(Continued from page 95)

home-farm shop improvement program has not been successfully undertaken. An improvement program must certainly center around improved farm shop buildings. Even the planning of these buildings is an activity that has been participated in by only 15.2 percent of the students studied. Improvement jobs such as building farm forges or installing a shop stove had only 6.3 percent and 7.1 percent participation. This is equipment that only a few farm shops have. The author knows of forges and shop stoves that have been built of used and waste materials from the farm scrap pile. Some of the other jobs listed in Table VII may not be as easily and cheaply completed, but an ingenious vocational agriculture student encouraged by an "improvement-minded" instructor could accomplish more than is now being done.

Conclusions

On the basis of this part of the study we may now draw the following conclusions and add them to the conclusions of the previous article:

1. The amount of home-farm shop supervision that vocational agriculture students receive from their instructors is too small to be effective in getting carry-over to the home farm.
2. The lack of supervision is an indication that carry-over has not been emphasized at a point in the farm shop program where results might be expected.
3. Buildings used for home-farm shop activities appear to be inadequate to care for the shop needs of most farms. A further study of this topic would permit more definite conclusions.
4. A fairly high proportion of vocational students have access to an adequate supply of tools at home.
5. Vocational agriculture instructors in general recognize that farm shop supervised practice and a home-farm mechanics improvement program have not received the same degree of emphasis that has been given to the agricultural project program.

Another article at an early date will give attention to recommendations that will lead to improvement in our farm shop program.

*This is the second article on the Montana Farm Shop Program. The third article will appear in a future issue.

Table VI. Number of Students With Tools Available and Average Number of Farm Shop Tools on Home Farms of These Students

Farm Shop Tools	Number of Students With Tools Available	Percent of Students With Tools Available
1. Shop bench	83	74.2
2. Shop vise	76	67.8
3. Forge	44	39.3
4. Anvil	75	67.0
5. Hand emery wheel	54	48.2
6. Power emery wheel	15	13.4
7. Grindstone	65	58.1
8. Oil stone	80	71.5
9. Post drill	43	38.4
10. Rip saw	93	83.1
11. Hand saw	107	95.5
12. Saw set	55	49.1
13. Claw hammer	108	96.4
14. Metal hammer	72	64.3
15. Sledge hammer	95	84.9
16. Steel square	102	91.1
17. Tee bevel	36	32.1
18. Carpenter's level	94	83.9
19. Automatic drill	18	16.1
20. Draw knife	93	83.1
21. Carpenter's brace	95	84.9
22. Expansive bit	45	40.2
23. Auger bits (min. of five)	94	83.9
24. Twist drills (min. of five)	55	49.1
25. Plane	95	84.0
26. Screw driver	110	98.2
27. Wrecking bar	101	90.2
28. Flat file	107	95.5
29. Triangular file	91	81.3
30. Glass cutter	77	68.8
31. Putty knife	85	75.9
32. Cold chisel	106	94.6
33. Punch	106	94.6
34. Stocks and dies for bolts	41	36.3
35. Chain drill	9	8.0
36. Hack saw	97	86.6
37. Pliers	106	94.6
38. Pipe wrench	100	89.3
39. Tin snips	86	76.8
40. Blacksmith tongs (minimum of 2)	47	42.0
41. Harness needles	40	35.4
42. Harness awls	55	49.1
43. Harness riveting machine	47	42.0
44. Shovel or spade	110	98.2
45. Trowel	70	62.5
46. Center punch	90	80.2
47. Crescent adjustable wrench	101	90.2
48. Open end wrenches (minimum of 4)	100	89.3
49. Box end wrenches (minimum of 4)	64	57.2
50. Socket wrenches (min. of 5)	69	61.6
51. Valve lifter	26	23.1
52. Carpenter's dividers	28	25.0
53. Blow torch	51	45.6
54. Soldering copper	71	63.4

Instruction for Victory

(Continued from page 89)

Progress charts were used in each course of instruction. The charts were fashioned with the names of the enrollees on one side. A list of skills ran across the top of the chart. The traffic colors of green, amber, and red, meaning excellent, fair, and poor, were used in grading the students. They were able from the chart to check their attendance and at the same time to note their progress. Many were seen to go about their work with greater enthusiasm because they found a green mark instead of the previous amber or red mark.

It is interesting to note the number of skills which the boys were able to acquire with each piece of farm machinery in the Metalwork Course. For example, here is a cultivator which needs a general reworking. A student could strive for the green mark in the following skills; cutting hot metal, cutting cold metal, drill press operation, tap and die work, electric welding, acetylene welding, tempering, and painting. Numerous examples could be given to designate the skills acquired in the other courses that were offered.

The success of any type of vocational training depends to a large extent upon the useful placement or the increased efficiency of the trainee in his present vocation. War production work in this school area has created a very definite demand for skilled workers of all types. The trainees have been fortunate in being able to help supply this demand. Placement of the enrollees was accomplished in co-operation with several different agencies.

The accompanying table shows the present employment of the former O.S.Y. students.

Placement of O.S.Y. Trainees

Occupation	Number
War production	34
Military service	18
Advanced training	10
Employment on larger farms	3
Remained in original positions	92
Unaccounted for	34

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