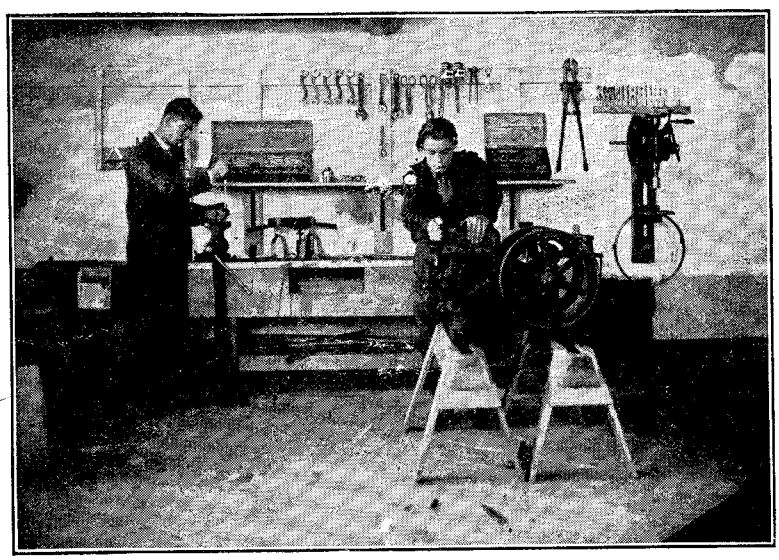
VOL. I. MARCH, 1929 No. 3

Agricultural Education

FARM MECHANICS NUMBER



Practical Farm Mechanics Instruction
In a School "Farm Shop"

"There is no better economy than the economy of adequate training for the pursuits of agriculture, commerce, industry and the home."
—HERBERT HOOVER.

EDITORIAL COMMENTS

AGRICULTURAL EDUCATION

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

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PRESIDENT HERBERT HOOVER

THERE is no little satisfaction in knowing that there is now in the president's chair one who is actively interested in agricultural education.

The new president has publicly espoused our cause on many occasions. For more than seven years he served as a member of the Federal Board for Vocational Education, becoming thoroly familiar with our problems thereby.

No stronger statements than his have been made regarding the advantages of vocational education. To provide for it, he has said, "is clearly a public responsibility. Not only so, but "education in general, including vocational education, is democracy's most important business." It is as important, he thinks, to train for the commoner wage earning pursuits as to train for the professions.

Educational affairs are going to be taken seriously by our new executive. "Education is our biggest business. It is our only indispensable business. If we blotted out our school business for a generation, we would slip back a thousand years in our progress. Our school business is the business—fundamentally—that has made us what we are."

His interest in agriculture and country life is no less keen than his interest in education. Who has stated more satisfactorily than he the goals for which we ourselves are striving: "To establish for our farmers an income equal to those of other occupations; for the farmer's wife the same comforts in her home as women in other groups; for the farm boys and girls the same opportunities in life as other boys and girls?"

As each of us works at his share of the task, he will be cheered by the thought that our chief executive works with us, directing his own vast influence and that of our national government toward the great ends we seek.—*H. M. H.*

* * *

REWARDING OUR LEADERSHIP

LEADERSHIP in agricultural education has not been an easy role. Particularly in the early days were the labors hard and the rewards few. Some of our first and ablest leaders have already passed on without having received recognition of their work at all commensurate with its merits. May we deal more fairly with those who survive!

With this issue we are introducing a series of articles dealing with our current leaders. We hope that they will not only provide memorials in print to their efforts, but that younger men will be tempted, on reading of their careers, to risk the perils and seek the rewards of leadership in our field.

It is appropriate that we begin this series with the stories of some of the older men in the profession and it is likely that none will question the choice of Rufus W. Stimson of Massachusetts as the subject of the first article. Father of our present system of supervised practice, Mr. Stimson has given us the feature which is most distinctive in our whole program. Unwaveringly, for 20 years, he has stood for the best in agricultural education. A man of cultural training, a gentleman and a scholar, he is known primarily for his contribution to the most practical side of a practical subject. Here, indeed, we have the union of the old and the new, the scientific and the practical, the useful and the cultural, which is our best ideal.

Other leaders will be discussed in successive issues. In each case, the article is solicited by the editor and the person apparently best fitted to write it is chosen by him. No attempt is being made to arrange these leaders in order of merit. We shall be pleased to receive nominations for this series.—*H. M. H.*

* * *

FARMER TRAINING

TEACHERS, supervisors and administrators of vocational education in agriculture need more and more to think, act and speak of the work they are doing in terms of "Farmer Training." A conscious effort should be made to get before the patrons, the pupils and the public the idea that vocational education in agriculture is not general education, but rather is a special type of education organized for a *specific* purpose. Before much headway can be made it seems that this idea must come to be accepted quite generally. There are some fundamental reasons why such a thing is true.

As long as leaders in vocational education in agriculture are willing to allow the public to believe that the work they are doing is primarily concerned with the general objectives of all education, just so long will the public be interested in seeing the departments function in this general field. They in many instances will come to believe that this is the field in which they should function first, and will resist, at least passively, any efforts for them to do otherwise. On the other hand if these same people are brought to an early realization that they have a special type of education in their schools, put there for a specific purpose and for no other, they are going to expect the attainment of that specific objective. It will be much easier to lead such a patronage, not only to expect, but actually to plan and work toward this attainment. Pupils will have as their first thought, "This is a farmer training course," and as a consequence they will be much more certain to want to incorporate into their training programs such activities, experiences, and situations as will lead them to become "well trained farmers." Such is not the case in too many instances at the present time. Let's adopt the practice of speaking and teaching in terms of "farmer training."—*R. W. G.*

* * *

FEDERAL AID FOR EDUCATION

Agricultural education has profited more from federal assistance than any other type of education. There are few in our field who would question the soundness of the use of federal funds in the promotion of educational programs, provided proper safeguards are set up. Our extensive experience in the use of funds nationally provided has given us increasing confidence in the desirability of the practice.

The principle of federal participation in the support of education is now accepted by most educational leaders as being desirable for all forms of education, and particularly for those necessary types which states and local communities are slow in establishing.

We should use our influence to secure the more general acceptance by the public of the principle which has meant so much to us in the development of our work. Other forms of vocational education and of general education as well are as deserving of federal support as our own program.

It is especially desirable that rural education, in general, should receive federal assistance. Such aid would doubtless be welcomed by farmers as a most acceptable type of farm relief, since it would lighten their burden of taxation and give their children opportunities now denied them. This is the type of farm relief to which city people will most readily agree.—*H. M. H.*

Our Leadership in Agricultural Education

RUFUS W. STIMSON, *Pioneer*

MASSACHUSETTS in this school year of 1928-29 celebrates the twentieth anniversary of the establishment of vocational education in agriculture in public schools of secondary grade; a program which has been continuous with only minor modifications since 1908. Certain features of the plan set up at that time have had wide influence in the nation. One man who was influential in the preliminaries of this campaign has continued in service during the 20 years, contributing ideas and a leadership which is generally recognized thruout the country.

In 1908 Rufus W. Stimson opened at Northampton the first permanent vocational agricultural school of secondary grade in Massachusetts with state approval and support. In 1918 he prepared his book on "Vocational Agricultural Education" for the assistance of the many new instructors of agriculture required under the Smith-Hughes Act. In 1928 he is still in the harness helping others to put across the whole scheme of vocational education but especially the *Home Project* plan of teaching agriculture.

A prophet should not be without honor in his own country and in his own generation. I deem it an honor to be permitted to present this appreciation of a colleague who is entitled to be rated a pioneer in our field of education. The limits of space forbid a biography, neither is his work yet complete, but we must briefly recite certain events of his life. Likewise the story of events leading to 1908, the significance of the period of 1906 to 1917, and a few of the men associated with him in the work must be mentioned altho these would demand a whole volume if fully expanded. Usually a prominent actor discovers a stage properly set for his drama and neither actor nor setting can be well understood alone.

Biographical Sketch

Rufus Whittaker Stimson was born at Palmer, Mass., February 20, 1868, son of Horace W. and Harriet A. (Hunt) Stimson. Farm reared and educated in the elementary and high schools of Palmer. Married Helen Morris at Boston October 4, 1899. A.B., Harvard University 1895; A.M., 1896; B.D., Yale University 1897. Taught 1897-1901, Connecticut Agricultural College; president of same 1901-1908. Director, Smith's Agricultural School, Northampton, Mass., 1908-1911. Present position, Supervisor of Vocational Agricultural Education in Massachusetts Department of Education since August 1, 1911. Associated in survey for Vocational Agricultural Education in Massachusetts reporting in 1910; Hampton Institute 1916-1917. Gold medal at Panama Pacific Exposition for the agricultural home project exhibit. Twice chairman college section, Association Land Grant Colleges before 1908. President, American Association for Advancement of Agricultural Teaching, 1915. Lecturer on vocational education at various summer schools. Author of "Vocational Agricultural Education by Home Projects" and numerous bulletins. Editor, "Agricultural Project Series." Associate Editor, "Vocational Education Magazine."

Early Influences

Doubtless if this skeleton of statistics were clothed with the living flesh of real biography, one would readily understand why he became such a champion of vocational education. We are primarily concerned with what he did beginning in 1908 and what came out of it,

Rufus W. Stimson

but it is not difficult, however, to discover certain factors in this statistical sketch which may partly explain what happened following 1908. The boy who is farm reared may enter other professions but the farm continues its hold afterwards. The second influence may be found in such men as Professor Paul Hanus of Harvard in whose courses Mr. Stimson had been enrolled. Professor Hanus was in 1906-1908 chairman of the commission on industrial education appointed by Governor Guild which paved the way for the present procedure in vocational education in Massachusetts. *This commission recommended Mr. Stimson to the Smith School Trustees as their first director.

A third factor lay in his experience at Connecticut where he found a great variety of demands for help in agriculture. Some of these needs required a full four-year course with diploma and degree. There seemed to be equally good reason, however, to furnish instruction for two years or one, for two months or two days if it would meet the need. This attitude regarding meeting a variety of needs easily adapted itself to the situation which developed in Massachusetts just prior to 1908.

The Background for His Work

Massachusetts, by reputation conservative, has ever been progressive in educational experiment as well as in industry. The fascination of such a story must be sacrificed in a historical "Who's Who" of events leading to the denouement in 1908.

In the fifty-fourth report of the Massachusetts Board of Agriculture, (for the year 1906), is a fascinating story of the "Early Agricultural Education in Massachusetts"† down to the founding of Massachusetts Agricultural College in 1863. This brief history sketches the attempt to establish real agricultural education beginning with the formation of the Massachusetts Society for Promoting Agriculture on March 7, 1792, an organization whose funds are still used for this definite purpose. With the fifty or more county or sectional agricultural societies which were organized prior to 1850 repeated efforts were made to establish agricultural schools or departments with varying degrees of success prior to 1863. Andrew Nichols' proposal in 1820 led to an attempt at Dummer Academy in 1824, a real but short lived department at Andover 1838 to 1843 and a permanent Farm and Trade School on Thompson's Island which opened April 8, 1833, and has as an endowed school continuously followed its vocational objective to this day.

The lack of funds, the absence of qualified teachers and the limited available subject matter content seem to explain the temporary character of each of the many experiments down to about 1860 when a movement to establish both secondary schools and a college of agriculture promised success. The civil war delayed these plans and the Morrill Act caused the concentration of effort on the organization of the college in 1863-1864.

However, an act of 1862 provided that "agriculture shall be taught . . . in all public schools in which the school committee deem it expedient." Without either special funds or even advisory assistance from any competent leader, there was an occasional isolated experiment by some high school prior to the revival of interest in more diversified educational opportunity.

From about 1890 to 1910 came a renaissance of interest in industrial education which resembled the movement prior to 1863. Many rural people wanted agricultural education of less than college grade. A commission appointed by Governor Douglas reported in 1906. The commission on industrial education, headed by Professor Paul Hanus, reported first in 1908. Its work continued and was taken over by the reorganized board of education, reporting in 1910.

A simultaneous interest in diversification of opportunities in the high schools resulted in local attempts to introduce agriculture and other "practical" subjects. In other parts of the country a similar movement resulted in special "district" and county schools teaching agriculture on an institutional farm.

* See "Beginnings in Industrial Education," Paul H. Hanus, 1908.

† Frederick H. Fowler, 1907. Distributed also as a separate.

At Northampton, Mass., the bequest of Oliver Smith, who died about 60 years earlier, matured and in 1907 funds became available to establish a school to teach agriculture and other occupations. The trustees in cooperation with the commission previously mentioned, anxious that this school should exemplify the principles set up, sought a director who could build for the future. Thus the stage was set for the pioneer and Rufus W. Stimson was selected for the part*

The rest of the story must be told either very briefly or at great length. Other men were at that time directors of agricultural schools elsewhere but in a large measure the school and farm instruction was institutional, influenced probably by what colleges had done.

Mr. Stimson then blazed a new trail by establishing a procedure which came to be known as the *Home Project Plan of Teaching Agriculture.* No one apparently then realized of how far-reaching influence was this single innovation which is generally accepted today in nearly every state and in some foreign countries.

Appointment to State Department

Almost at the outset, Mr. Stimson was called upon to cooperate with the state commission and with the state board of education in the campaign which resulted in the report of 1910, the legislation of 1911 and the establishment of vocational education on the present permanent basis. Part time service with the department of education as a "special agent" led to his permanent and full time service as "agent," a title which all supervisors have held until recently.

The reorganized board of education in 1909 appointed Dr. David Snedden as commissioner because of his progressive ideas in education. Charles A. Prosser was selected for deputy commissioner in charge of vocational education in January, 1910. Charles R. Allen of "job analysis" fame joined the staff soon. These are names to "conjure with" in vocational education. This group, with others in sympathy with vocational education as we now know it, made cooperation possible and both the home project plan and job analysis had a friendly try-out from the start. Nevertheless, even in this favorable setting, real prophetic vision was required to accomplish what soon came of the experiment.

His Influence on Other State Programs

Shortly visitors of note came from everywhere to Massachusetts to study the plan in operation. Mr. Stimson's method with these visitors, (as well as with Massachusetts men whom he interested), has always been to go directly to the schools and then with the instructor go to the boys' projects. The writer remembers one visit among others at his own school when in 1913 with Mr. Stimson came Hawkins of New York, Dennis of Pennsylvania, Carris of New Jersey and William T. Bawden, editor of Vocational Education. After a few questions and a look at the school they requisitioned Instructor E. J. Burke and went out to observe projects, after which they visited other schools. An account of these visits was published by Mr. Bawden in the magazine for November, 1913.

Here we discover another of the activities of Mr. Stimson which was destined to have a wide influence. Mr. Bawden pointed out that Mr. Stimson's visits were not merely supervisory and inspecional but also furnished guidance and help for the teachers. This soon developed into what is now known as "itinerant teacher-training," the only officially recognized type of training for agricultural teachers in Massachusetts prior to 1919. In fact this type of training is still depended upon largely in the state for much of that service which elsewhere is conducted at colleges. A supervisor of teacher-training has relieved Mr. Stimson of some of this burden but the work goes on much as in the early days.

An address by Mr. Stimson before the American Association for the Advancement of Agricultural Teaching in 1918, afterwards widely distributed, appears to have had much to do with the wide prevalence of this plan of "teaching teachers to teach while they are teaching."

"I believe that Mr. Stimson has been the means of saving millions of dollars to this country thru having established and tried out the home project idea before the Smith-Hughes Act was passed. If this method of giving supervised practice had not already been proved to be successful, it is quite likely that many separate vocational schools would have been established having school farms and other expensive equipment. I think we all now see that the establishment of vocational agriculture in a comprehensive high school using the home project for supervised practice is highly superior to the vocational work in a separate school having a school farm."—Professor C. B. Gentry, State Supervisor and Teacher-Trainer, Connecticut.

Early Use of Job Analysis

As one phase of teacher-training, Mr. Stimson adapted the job analysis idea to the development of "project outlines." The idea was fundamentally sound. Each instructor prepared project study outlines in some fields such as poultry raising, home gardening, or fruit growing. This job analysis was highly beneficial to every man who did some of the work.

In view of the scarcity of good literature in the field at that time, these outlines were exchanged and latter compiled and edited. A few were published. The men who should have been helped most by these suggestions and who should have revised them for local needs, (or even made new outlines), were often tempted to "lie down" on the existing outlines. This was not a fault of the job analysis idea involved, as may be judged from the acceptance of the main idea but it led to the substitution of a modification of the plan.

Thus among many of the ideas which have been incorporated in recent vocational teaching of agriculture in which Mr. Stimson's influence was helpful and cooperative, these following may be conceded either as originating with him or as developed by him early in the vocational teaching history.

1. The home project plan with its modifications.

2. The teacher's and pupil's analysis of the jobs in the project as contrasted with the use of subject matter outlines.

3. Teaching teachers while they teach.

4. Visiting and studying the work of other people in the same field for the purpose of improving one's own work thereby.

Doubtless the most important, most far-reaching and best known of all these is the "Home project plan."† Whether it be called the "project" or the "enterprise" or by some other name, the psychology of the idea seems to have been accepted as sound. Its great economic importance is often overlooked.

An Estimate of His Contributions

Professor C. B. Gentry, state supervisor in Connecticut, recently said publicly: "I believe that Mr. Stimson has been the means of saving millions of dollars to this country thru having established and tried out the home project idea before the Smith-Hughes Act was passed. If this method of giving supervised farm practice had not already been proved to be successful, it is quite likely that many separate vocational schools would have been established having school farms and other expensive equipment. I think that we all now see that the establishment of vocational education in agriculture in a comprehensive high school using the home project for supervised practice is highly superior to the vocational work in a separate school having a school farm. I think also that Mr. Stimson has made another outstanding contribution to vocational education in agriculture in the early introduction of the itinerant teacher-training program."

It should be stated that under Mr. Stimson's leadership the county schools in Massachusetts have depended largely on the home project or equivalent employment for the major part of their supervised farm practice. The school farm is used for subsidiary purposes.

Mr. Stimson has used a method of concentrating on one improvement, driving it hard and persistently even at the risk of being thought narrow. It was necessary to adhere to certain policies long enough to give them a fair trial even against opposition. A summer conference "on wheels" and a subsequent year's campaign would be focused on one feature rather than risk a diffusion of effort.

Yet he has gradually conceded points which deserved to be changed. He has always been courteous but without patience with the man who would sham or who would not cooperate. He has visited nearly every boy every year and his encouragement has been a factor in the relatively large number of successful projects.

While there is much more I could say in elaboration of each of these points, I wish to use the remainder of my space to quote briefly from several of the men who have been influential in the development of vocational education and who have been personally acquainted with Mr. Stimson's work from the early days. As Mr. Carris writes, "It would be easier to write pages than sentences in this case."

(Continued on page 14)

* See Professor Hanus' introduction to "Vocational Agricultural Education."

† This has been thoroly described in Mr. Stimson's bulletins published by the Massachusetts Department of Education, in Bulletin 1914 No. 8 of the U. S. Bureau of Education and more fully still in his book entitled "Vocational Agricultural Education by the Home Project Plan," 1919.

The Way of Agriculture—Engineered

L. J. FLETCHER

THE AUTHOR

Mr. L. J. Fletcher, who delivered the address reported here, was formerly head of the Division of Agricultural Engineering of the University of California. He is now General Supervisor of Agricultural Sales of the Caterpillar Tractor Company.

WHAT is agricultural engineering? Engineering may be defined as directing the utilization of forces and materials in nature for the benefit of mankind; agricultural engineering is, therefore, the directing of these same forces and materials for the benefit of agriculture. An engineering technique has long since been developed for such industries as mining, transportation, communication, and construction. Agriculture, the greatest of the world's industries, was the last to receive the attention of the engineer. Some of the reasons are obvious: the small size of the individual producing unit, the interlocking of a mode of living with the business of farming, the difficulty of extending to agriculture the work of the specialists.

Agricultural engineering is the youngest of the major divisions of the colleges and experiment stations in the United States. Thirteen years ago the division of agricultural engineering was established in this college of agriculture. Professor J. B. Davidson was the first professor of agricultural engineering in the University of California. For four years this new division grew under the diligent and efficient guidance of this recognized leader of his profession. This complete building and its effective program of activities is erected on the sound foundation laid by him. His vision of an engineered agriculture, an agriculture efficient in production and happy with its improved living conditions, was instilled in his students, his associates, all those who knew him. His work will carry on in California.

What is the way of agriculture? Let us look at three pictures: perhaps they will illustrate the way. First, Mt. Vernon, the home of George Washington. Here we find a true picture of the organization of agriculture 150 years ago. A fine home, tho lighted with candles and heated with fireplaces, surrounded by a score of small buildings which housed such activities as cooking, spinning and weaving, soap and candle making, blacksmithing, carpentry, butchering, shoemaking—the work carried on largely by servants skilled in these various vocations. Here was a complete community making use of a hundred workers, producing all of the things necessary for their existence, with the exception of such materials as salt, iron and gunpowder. Over 95 percent of the population of this country at that time were engaged in this kind of agriculture.

The second picture, Old Salem on the banks of the Sangamon River in Illinois, where Lincoln, in 1833, was a partner in a store and later postmaster. The state of Illinois has made a park of this historic and interesting spot. Here as the visitor walks along the single street of the one-time New Salem, he sees restored the evidence of the beginning of industry. A dozen small cabins line the street, here labored the cobbler, next the wheelwright, there the cooper in whose shop Lincoln read at night in front of the large stone fireplace; over there a cabin in which the spinning of wool and weaving of cloth furnished the means for a livelihood. The hatter and the blacksmith were established in their embryo factories, and by the river was the miller. And yet the enterprise which at that time employed the most in labor, in capital, and produced most in wealth, was the farm. This was 90 years ago, when the average man by working hard all day, every day, could care for the crops on 12 acres. He was beginning, however, to exchange his product for the product of the worker in the village.

The third picture is Today. Leaving Old Salem and driving over a concrete road in a "carriage" traveling 40 miles per hour (the speed limit in Illinois), an hour's trip will tell the story. Here is a farm implement factory employing thousands of men, a brick plant, a shoe factory, another establishment which turns out nothing but socks—but many of them; here a small town with a large group of busy buildings into which thousands of carloads of corn enter to come out as starch, sirup, corn oil, and corn sugar; a pile of baled straw 50 feet high and covering a block—raw material for the paper boxes used by a large manufacturer of breakfast food. The farms have changed also—machinery, electric service, better homes—(some better than others, for the ability and desires of men will vary). Farming has not stood still in the race with the mushroom growth of industry. The productive efficiency of the farm worker increased 15 percent in the five-year period, 1917-21, a remarkable record in itself and a real tribute to the ability of the farmer of today, to the new machines of production made available to him, and to the efficiency of the agricultural college.

New Agricultural Engineering Building, Davis Branch, University of California. Professor L. J. Fletcher spoke on "The Way of Agriculture—Engineered" at the dedication of this structure

A popular diversion today is the comparing of agriculture with what is termed "industry;" usually to the disparagement of agriculture. This is largely owing to the fact that the statistics quoted for agriculture are most often the average, that is, average cost, average yield, etc., while industry is largely known by the records of its most successful example. The runner who endeavors to excel the average speed of his classmates will never make the track team. To win he must excel the best.

The average yield of cotton in Texas is 135 pounds per acre, the average cost of production 21.4 cents per pound. Yet 27 farmers in Texas raised an average of 1,241 pounds per acre at a cost of 4.7 cents per pound. Examples of a similar nature exist for all crops and all sections of the country. Efficient farming today demands and is receiving the same intelligent management as is efficient industry. The very men who are making low cost records in producing cotton, sugar cane, peanuts, corn, wheat, or fruit, are in every way capable of operating our prosperous industries; in fact, the chances are that if these managers exchanged places some of agriculture's advisers might learn what it is to battle with such unruly variables as rainfall, temperature, winds, hail, bugs, and the consequent effects on surplus and price.

Some blame the engineer for the present problem of the surplus—say we are suffering because the farmer's ability to produce is increasing faster than the nation's ability to consume. "Scientific agriculture is the salvation of the individual and the ruin of the mass," is a statement made in a recent book on the agricultural situation. However, the reader may pick up another treatise and read that "a surplus is a necessity and constitutes the difference between barbarism and civilization." Statistics are marshalled into books by authors who gravely warn us that in the not distant future the people of this country will be starving because of our inability to produce enough food; while others from the same statistics and with equal gravity aver that our farmers could produce over three times our present quantity of farm products

without an increase in acreage, thus completely ruining themselves!

But this is America, where to hurt an economically sound industry is to benefit it. According to Mr. Thorpe in *Nation's Business,* 2,000 ice producers faced the entry of electrical refrigeration. Did they quit? No! They studied their own industry — they cleaned house — they stopped peddling ice and began to merchandise it — they increased their business 7 percent in 1927, with a still larger increase last year. Silk has not succumbed to rayon — phonographs to radios. Montana, one of the first states to feel the crash of a hurt agriculture, is now one of the consistent white spots on the business map — is demonstrating to the world profitable methods of growing wheat.

Many agricultural writers are alarmed at our decreasing consumption of food per capita—point out that "all departments of human expenditures are capable of indefinite extensibility except the department of food." But remember that agriculture furnishes the material not only for food but for clothing and shelter as well. As we increase the buying power of this nation—the greatest freetrading area on the face of the earth, spending each year an amount equal to three times the value of the exports of all the countries of the world—we increase our ability to buy more shelter and more clothing. Science is opening the way toward a vast utilization of agricultural products for "non-stomach" uses. In 1921, 9,000,000 pounds of rayon were manufactured from cellulose—a material found in every plant that grows. This year 95,000,000 pounds of rayon will be made from cellulose secured from cotton linters, wood pulp, peanut shells and corn stalks. Professor O. R. Sweeney of Iowa State College, states, "Over 300 compounds have already been produced in our laboratory from agricultural wastes and every one of these materials has commercial possibilities." These products range from wallboard and paper to solvents and cloth.

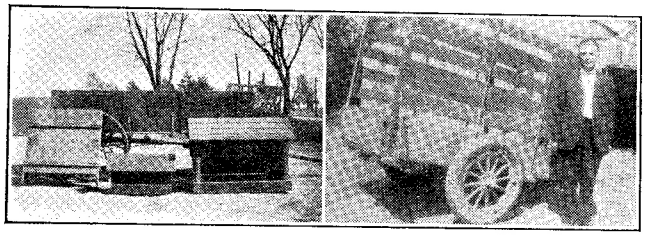
Results of Machine Farming

Machine methods of production have not ruined our agriculture. We should rather credit farm machinery with reducing the expenditure of manual labor on our farms, with shortening the working day, with increasing the production per worker. Progress consists of continuously solving the problems of today which arise out of the solution of the problems of yesterday. To solve a problem is to create another.

Large farming is in the air. The question is not whether we want the large farm but rather, what are we going to do with it? How will we direct its development?

This is an age of specialization. Other industries employing the specialist have prospered. As now commonly organized agriculture cannot most effectively employ highly trained men. The average farm unit is too small to bear the cost. However, the large farm is unusually attractive to the trained man. Because of valuable experience gained during recent years, more large farms are succeeding. The tendency of all successful industry is to expand—to increase the size of the project.

With the increase in the size and variety of labor saving farm machines the short annual period of use of these machines on the smaller farm becomes an increasingly serious problem. For example, the load factor, that is, the percentage of annual full-load use of all power units employed, is about 4½ percent on farms in the United States. Manufacturing industries enjoy a load-factor of over 14 percent. Were it possible to secure this load-factor in agriculture, the present 50,000,000 primary horsepower employed on farms could be reduced to less than 20,000,000. Some well-managed electric utilities are now securing load-factors of over 50 to 60 percent. Agriculture can hardly hope for such high utilization; but considerable improvement is feasible.



Some products of the shop

The most recent mechanical development in agriculture is the perfecting of field and belt machinery for use with the tractor. The mechanism for large farming is available.

Related Problems

One of the present problems of agriculture is that of paying too much for credit. In general, money at comparatively low interest rates is available in this country for safe investments. If the present high credit charges are justified, how can the risk be removed so that agriculture may enjoy low money rates comparable with other industries?

The immigration policy, which keeps out of the country large numbers of people who would be content to use hand equipment in agricultural production, is making necessary the use of machines for multiplying the effort of the farm worker.

Our government has evidenced a real desire to aid agriculture—the large, well organized farming project should be able to realize the benefits of these relief measures.

To offset this picture of an industrialized agriculture, we have the desire of many to combine the privileges of rural life with an occupation. The farmer is largely independent in his every-day affairs. He is assured of a home and food, and is largely protected from the anxieties of the industrially employed. However, no matter how enjoyable are the possibilities of rural life, there is required a certain profit or income from which may be provided those things which are now considered necessities, particularly in the modern home. There are those who maintain that many of our agricultural workers would be far happier and able to live under much better conditions if they were working for others rather than attempting to run their own machines. However, defining the requirements for happiness of others is a rather dangerous undertaking.

California leads the nation in the engineering of her agriculture. She leads in the amount of power used per acre of improved land, and in income per farm worker. The amount of electricity used on the farms and in the farm homes is far in excess of that used in any other state: over 800,000,000 KWH per year. This is sufficient electric energy to operate two 50-watt electric lamps for four hours every night in the year in every farm home in the United States. Sixty thousand California farm homes are lighted by electricity; in 48,000 electric irons are employed; electric washing machines lighten the labor in 28,000 homes; while 25,000 clean the floors with vacuum cleaners.

California has contributed much in the development of farm machinery. The combined harvester, which has revolutionized the grain farming industry in the great Middle West, was conceived, built and operated in this state 40 years ago. California originated the track-type tractor and many of the more efficient machines used in irrigation, in tillage, and in the processing of fruit.

You have in California an agricultural engineering division as part of your college of agriculture, which is clearly second to none in any other state. The results of the research work carried on in this division have materially influenced such matters as the protection of farm machinery from dust and other causes of wear. It would be difficult to estimate the dollars and cents saving to farmers of this state, as well as of the nation, from this one outstanding example of well-conducted investigation. Other projects have included the more efficient utilization of electricity on California farms, the improvement of dairy equipment, better design and utilization of many types of harvesting machinery, and the improvement of farm structures, particularly those employed in the poultry and dairy industries. The encouragement of the use of a simple type of septic tank has resulted in improved sanitary conditions in our rural communities.

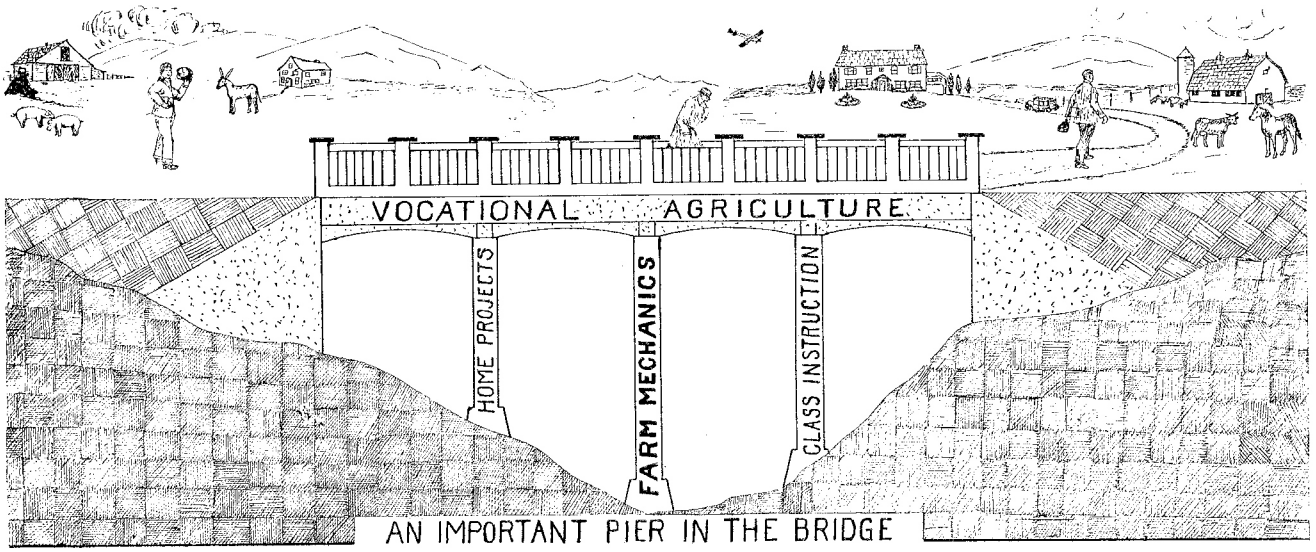
Instruction Given

Thousands of California people have received instruction in the proper selection, use and care of all types of farm equipment in the regular courses here at the university farm, as well as in many extension courses and meetings conducted by the agricultural engineers of the university. Citizens of other states and other nations are privileged to learn here the way of agriculture—engineered—the way toward profitable production and comfortable homes.

So may this new agricultural engineering building, beautiful in its design for service, prove a fitting workshop for men destined to contribute much toward the solution of the complex problems of the agriculture of this state, the nation, the world.

The Emmett, Idaho, high school has recently completed a four weeks auto mechanics course. Sixty-three students were enrolled in the day classes and 20 in the night class. The latter was composed largely of farmers and farmers' sons. As many as 9 automobiles and a tractor were on the floor at one time undergoing repairs under the direction of an expert mechanic.

FARM MECHANICS DEPARTMENT



AN IMPORTANT PIER IN THE BRIDGE

The Place of Farm Mechanics in the Vocational Agriculture Program

G. A. SCHMIDT,
Professor Agricultural Education, Colorado Agricultural College.

THERE are five reasons why I believe that farm shop work and other forms of farm mechanics should be an integral part of all vocational agricultural training courses.

The first reason for making training in farm mechanics a part of the vocational agriculture curriculum is that such training meets real vocational needs. The typical farmer is not only a producer of agricultural products but he is also an unspecialized mechanic and some of his success as a farmer is dependent upon his mechanical abilities. The major construction and repair work arising on farms will not generally be done by the farmer but by capable mechanics. However, simple construction jobs such as building a hayrack or a poultry house; overhauling jobs such as overhauling an engine or a binder; and repair, adjustment and replacement jobs such as repairing harness or hay rope, adjusting parts of a binder and replacing worn parts of farm machinery and equipment are jobs that will be done by the farmers. In fact, hundreds of different kinds of simple construction, repair, replacement and overhauling jobs arise on all farms which the farmer engages in and developing the abilities of farm boys to intelligently and efficiently engage in these activities is meeting real vocational needs of these boys.

The second reason for making farm mechanics a part of all vocational agriculture courses is because of the ever-increasing need for such training. The need for instruction in farm mechanics is gradually increasing on all farms as tractors, auto trucks, automobiles, water and sewage systems, lighting plants and numerous other mechanical appliances and equipment are being used on the farm and in the farm home. There is no doubt but what the use of all kinds of labor saving devices will increasingly find a place on all farms and the proper choice, use and care of these devices requires training.

The third reason for making training

(Continued on page 12)

THIS DEPARTMENT

AS WORKERS in the field of agricultural education, we are all more or less interested in that phase of the work which deals with the farm shop and farm mechanics. No vocational agriculture program is complete without such instruction. The need and demand for efficient training must be met by those who are attempting to prepare pupils to enter "the great occupation."


W. A. Ross

Our purpose in conducting this department is to assist vocational agriculture workers in the improvement of the farm mechanics program. These columns will serve as a medium of exchange for worthwhile ideas which will aid in accomplishing this end. The whole-hearted support of teachers, teacher-trainers and supervisors is requested.

Farm mechanics contributions from those "on the firing line" are necessary for each month's issue of *Agricultural Education*. Pictures, illustrations, or half-tones accompanying written articles will improve the reading and add to the interest. These will be returned to the sender. We want this department to be of the greatest value to you. Your suggestions as to the type of farm mechanics article which you would like to see appear in these columns will be appreciated. As far as possible, the farm mechanics material will be departmentalized in each issue of *Agricultural Education*.

Articles sent in for publication will be welcomed at any time but must be received a month ahead to be included in the next issue. Address all communications concerning farm mechanics to W. A. Ross, state supervisor of agricultural education, Cheyenne, Wyoming. —*W. A. R.*

California's Summer Short Course Program for Farm Mechanics Teachers

H. M. SKIDMORE,
Supervisor of Classes for Teachers of Agriculture, University of California.

THE division of vocational education of the University of California, and the division of agricultural engineering, college of agriculture, in cooperation with the state department of education, succeeded more fully in satisfying the needs of those in attendance at the special short courses last summer than has been done heretofore. It seems likely that others may be interested in the set-up used.

A background of our present situation is necessary for complete understanding: The first state plan issued in 1917, and the succeeding ones, stipulated that for each year of agriculture offered in the high school departments of the state, a year of farm mechanics instruction must also be given. These requirements necessitated the employment of a special teacher of farm mechanics in practically every department organized. This created such a demand for teachers of farm mechanics that, in view of the lack of training facilities in that field, it was necessary to employ many as teachers of farm mechanics who were not familiar with the mechanical problems of the farm.

Inasmuch as the division of agricultural engineering was located at the university farm, Davis, and the courses for training teachers of agriculture were offered at Berkeley, a satisfactory program of resident training for teachers of farm mechanics has not been developed, therefore, the training given was necessarily in the nature of summer session work for up-grading purposes.

The 1928 summer short courses were organized as follows:

1. In order that the men might receive the definite instruction needed, rather than that dictated by university requirements, the courses were set up to run a term of four weeks without college credit, and were designated as special short courses. This fact also permitted the charging of a very nominal fee instead of that usually charged for regular summer session. The work done

(Continued on page 9)

Cutting the Cost of Farm Mechanics Instruction

By S. S. SUTHERLAND,
Assistant Agricultural Engineer,
University of Montana

TO FINANCE a farm shop program in most of our western states, and in many sections of the middle west, the farm mechanics instructor must be a financial genius. His problem, in brief, is to initiate and maintain the highest grade of instruction with the least possible cost to the community, and in many cases this resolves itself into attempting to get something for next to nothing.

It is for the farm mechanics teacher who has to secure the maximum results with the minimum of expense that the following suggestions are given:

First, cut construction projects in woodwork to the absolute minimum. This type of shop work costs money—more money than it is worth to the farm boy. Someone, either the school, the student, or the farmer has to pay out cash every time you start work on any construction project in woodwork, and any such project can be replaced by instruction that will better fit farm boys for farm work.

If we eliminated woodwork entirely from our shop courses we would actually be doing a better job of teaching farm mechanics than we are doing now with the type of woodwork most of us teach. A radical statement? Here is the proof. The following statement is quoted verbatim from "A Study of the Farm Mechanics Courses in the Vocational Agricultural High Schools in Kansas," by Lester B. Pollom, state supervisor of agricultural education:

"A study of cost-account records of farms in central and eastern Kansas indicates that less than 5 percent of the time devoted to farm mechanics on such farms is devoted to constructive carpentry."

Prof. M. A. Sharp of Iowa State College, in a study made last year to determine what parents of boys in Smith-Hughes agriculture classes wanted their sons taught in farm shop work, found that practical farmers ranked *farm* woodwork projects eighth in importance among sixteen types of farm shop work, and furniture construction and repair projects *sixteenth* in value.

Can we blame a community, or the school board who represents them, for refusing us additional funds for tools and material when we use them to teach the least important types of shop work and ignore types that every practical farmer knows are important?

Second, eliminate all "exercises." We can generally get material furnished us for most construction projects without using school funds, but material for exercises comes directly from our own stock. Aside from the financial standpoint, the exercise is a poor teaching device where actual projects are available, and at best is only a substitute. Even college shop instructors are trying to eliminate this type of instruction from their classes.

Third, replace exercises and construction projects with repair jobs. It is obvious that it costs less to repair a wagon box than it does to build one, while the skills you wish to teach may be developed in the former as readily as in the latter. The farm shops on the best farms in your community are repair shops, the school shop should be one also.

While the alert farm mechanics instructor may realize that other types of shop work are of more value to farm boys than small woodwork projects or furniture making jobs, precedent has decreed that shop work means woodwork and little else. As a result, he finds his shop equipped with an adequate set of carpenter tools, and that is about all he has to work with. How can he repair a mower or overhaul a gasoline engine in his shop when he hasn't the tools for the students to use, and no money to spend for them? A difficult problem, but why furnish the tools? The school doesn't furnish pencils and fountain pens for the students to write English themes; why furnish them wrenches and pliers? Let the boys bring tools from their home shop, mark them with acid or with steel dies to avoid losing them, and save your school some money. It has been tried, and it works.

The problem of financing farm shop work, especially in the small school, is a real one—one that most of us have to meet. Last, and most important, get good results with the money you are given to spend. Get $10 worth of good out of every $5 allotted you, and the next time you'll get the ten.

Farm Shop Records

J. H. PEARSON,
State Supervisor of Agricultural Education,
Nebraska

IN many vocational agriculture schools inadequate records have been kept of the work which has been covered by the class or has been done by the individual. In recognition of this fact the farm shop committee at the annual state conference in Nebraska recommended that a very definite shop record be kept in all schools.

Arrangements were made with a publishing company to print a chart 12 x 18 inches for such records. The names of the students are to be inserted at the top of the page. There are 38 lines on the sheet. Either the kinds of work (woodwork, babbitting, soldering, etc.) or the jobs (made an individual hog-house, constructed concrete walk, soldered a milk-pail, etc.) are to be entered on the margin of these charts.

When the kinds of work are listed spaces should be skipped between each kind of work. This would give the teacher an opportunity to record the grades, whether the work done was a real job (R) or an exercise (E), and the amount of time devoted to that kind of work. When the job is recorded more sheets will be needed during the year. The latter method, however, gives a more complete record of the amount of work which has been accomplished during the year.

These same charts will be used by some teachers to analyze the kinds of shop work into unit operations. When used for that purpose the unit operations will be listed on the margin and the kinds of work at the top of the page. Each student may then check himself in the knowledge acquired and the skills which he has mastered.

At the close of the quarter, semester or term, these charts should be filed. They give a permanent record of each student and his attainment.

Such charts, regardless of the method in which they are used, are very desirable in the shop. They are constantly before the students. Each one is able to see at a glance what he has accomplished during the year. These charts also are a guide for the teacher by helping to prevent an over-emphasis of one kind of work and the neglect of another. The object of a shop program should be to offer a well-rounded course rather than to develop a high degree of skill in a particular kind of work.

Using the Project to Stimulate Farm Shop Work

By ABRAHAM COAN,
Teacher of Vocational Agriculture,
Lambertville, N. J.

IT IS difficult for our average boy studying vocational agriculture to get very much work done in the 50 hours a year which he spends in the farm shop. By the time he gets started and stopped, he has used up a considerable portion of his time. I have found that the project is a valuable help in keeping the boy working at top speed during the shop period and to me it has been a method of getting far more work done outside the school than was done inside. In fact, I wouldn't dare ask boys to do one-quarter of the work which they have voluntarily completed.

They have made candlers, wired poultry houses for electricity, laid concrete floors and built wheelbarrows for cleaning henhouses; they have built brooder houses of various sizes, laying houses 20 feet square and they have made signs as large as 6 feet square to label their projects. One year, 13 poultry houses were built by boys for use in project work. In every case a considerable portion of the work was done by the boy and in several cases the entire house was built by the boy himself. One of my boys is now building a hotbed 12 feet long for his plant growing project.

The accomplishments of one boy are worth mentioning. He built and painted a brooder house and made mash hoppers for his growing chicks and later for his pullets. For his watering dishes and mash hoppers, he made hardware cloth stands and for his records and supplies he made a wall case. Not content with this, he made a 3-foot sign with 2-inch black letters to point out the scope and ownership of his project.

One of the most valuable results of project-motivated shop work is the originality which results. We had a class project one year which resulted from buying 100 uncalled-for baby chicks at the local post office. When the last boy left the agricultural room at 6 o'clock that night the chicks were safely housed in a homemade electric brooder which worked beautifully for several days until a commercial brooder could be secured for the chicks.

Original devices designed and made by my boys for their projects include attachments for adjusting brooder and laying house windows, wall cases for records and supplies, combination fattening and catching coops, caponizing boards and automatic devices for controlling electric lights and electric water heaters. It has been my experience that without the demand created by the project it is extremely difficult to get original designing in shop work.

I have found it possible to teach shop work without any motivation from the boy's project but with this motivation, shop work has almost taught itself and has resulted not only in the education of the boys but the instructor.

Securing Orders for Farm Mechanics Projects

G. C. COOK
Assistant State Supervisor of Agricultural Education, Fargo, North Dakota
(Formerly Instructor at Falls City, Nebraska)

NO DOUBT vocational agriculture instructors often wonder how to obtain orders for desirable farm mechanics projects. It is very probable that they would like to have the class make some individual hog houses, hay racks, wagon boxes, etc., but the boys say, "We have plenty such projects at home—we don't need any more." Other instructors may have had the class construct such projects but were unable to sell them, hence they let the class construct anything they can get.

In my experience as a vocational agriculture instructor, I found that if the farm mechanics work were going to be a success and if we were going to sell the work to the community, our work would have to meet certain standards:

(1) The project must be built to meet the needs of the owner.

(2) Good materials as well as the proper materials must be used.

(3) We must demand good workmanship in every detail.

(4) The project must be built for strength and durability.

(5) It must be well finished.

(6) It must be practical.

(7) It must be advertised.

I planned to use every opportunity to advertise our farm mechanics work. In the beginning, articles explaining the work were put in the local papers. We also got the lumberman to cooperate in building some practical projects such as hog feeders, scoop endgates, individual hog houses, etc. He furnished the material, the class constructed the projects and placed them in front of his business where everyone could see them. In order that one might know who constructed the projects stencils were obtained and the name of the department and the school were painted on each.

As soon as the community found out the type of work done they began soliciting our department to build such projects for them. Several exhibits including woodwork, forge work, motors, rope work, soldering, etc., were shown at the local fair and also at the high school on special occasions.

Evening schools proved very helpful in obtaining orders. Each year at the close of our evening schools we planned one "big get together" where everyone came into our high school for a program. We always planned to have a very complete shop exhibit.

This last year we had an 8x12-foot Nebraska-type brooder house, one individual hog house completed (showing the construction and framework), one hay rack, one car trailer, two hog feeders, and several chicken feeders along with exhibits of forge work, motors, rope work, etc. The year our high school was completed, we had a "high school night" when everyone could visit each department. We used the opportunity and had each boy in the department doing something in some phase of our work. In the shop, boys were actually doing forge work, soldering, harness work, rope work, valve grinding, constructing and repairing woodwork, etc.

We always made a special effort to have everything built in a practical yet modern way, durable and well finished (painted); very few varnished projects were shown.

The results were amazing. We received so many orders for shop work that it was necessary to tell the people that so much work was promised that we would probably be unable to fill their orders but we would do our best.

Over a carload of lumber was used during the year by a class of 31 boys meeting two days a week for 135 minutes each day.

The shop was self-supporting as a small fee (after the first year when the work was advertised), was charged for each project made for people other than the students. One dollar was charged for making each individual hog house or hay rack, $2 for each wagon box, $3 for each brooder house (500 chicken capacity), $1 for grinding valves on a 4-cylinder engine, etc.

All shop tools were kept replaced and all other current expenses were paid for in this way. Some money was left in the treasury and this was used to send the livestock judging team to the annual high school judging contest.

California's Summer Short Course Program for Farm Mechanics Teachers

(Continued from page 7)

was acceptable to the state department of education for renewal of credentials, which indicates the cooperation from that direction.

2. The majority of the men are fairly good mechanics. Their greatest shortcoming is a lack of knowledge of what to teach and how to organize for effective teaching. Therefore, a special instructor in methods of organizing and teaching farm mechanics was brought on to handle that phase of the work.

3. One-half of each day was given over to methods work and the other half to technical subject matter. The class in methods ran from 8 to 10:30 leaving the balance of the forenoon for special notebook and library work.

4. The shop work was organized under four heads, all to run concurrently: (*a*) General farm mechanics including forging, sheet metal work, some rope and leather work; (*b*) farm structures; (*c*) farm power, including gas engines and tractors; (*d*) farm machinery and pumps.

These courses were organized on the basis of weekly units so that a student could elect one or more units from any of the four fields. For instance, he might take one week in each of the four fields, or he might elect to continue for four weeks in any one field. Transfers from one field to another were permitted only at the beginning of each week.

5. The instruction was made as nearly individual as feasible with the teaching staff available, thus rendering it possible for each individual to get approximately that which he needed to round out his own training and to prepare him to handle those enterprises involved in his own local set-up.

Fifty teachers were in attendance, with experience ranging from none at all to those having taught longest in the state. These 50 men, with hardly an exception, were thoroly pleased with what they were able to get during that four-weeks' period. Their comments have been unusually favorable and there is ample evidence to show that many improved practices have resulted.

It appears that two or three things were responsible for the apparent complete success of this special short course:

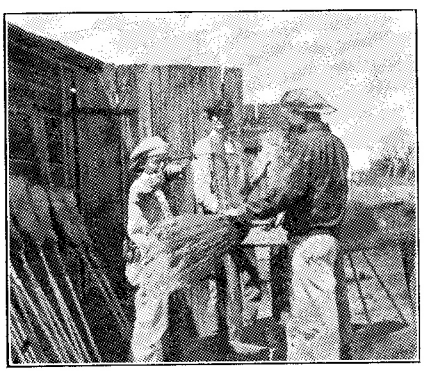
1. The absolute and whole-hearted spirit of cooperation on the part of the agricultural engineering staff, as evidenced by their willingness to lay aside their problems for the time being and devote their entire attention to this group of men on the campus.

2. A man in charge of the methods work in whom the men had confidence and who had something very definite to give them which they could see would improve their teaching. Mr. W. A. Ross, state supervisor of Wyoming, measured up to these specifications to a most satisfactory degree.

3. A feeling of need on the part of the group of teachers in attendance, which would lead them to work whole-heartedly for the instructors.

The 1928 special short course for farm mechanics teachers possessed all of these elements to a degree that it would be hard to duplicate.

An Unusual Farm Mechanics Enterprise



Hawthorne, Texas, School broom factory

The Hawthorne school is located in a rural community which has much impoverished soil. The corn used in the manufacture of the brooms was raised by the boys and made into brooms at the school as a part of their farm mechanics work.—W. F. Rudd, Instructor.

Successful Teachers of Vocational Agriculture

By ARETAS W. NOLAN, University of Illinois

THE Case Method has been successfully employed in the training of professional workers in many different fields. The writer has used this method with gratifying success in the training of teachers of vocational agriculture. With the approval of the editor of *Agricultural Education* I should like to offer a series of *Cases*—descriptive of the personality and work of a few successful teachers of vocational agriculture in Illinois. A study of these *Cases* should be of practical value and inspirational challenge to prospective teachers as well as to those already in the service.

Dr. A. W. Nolan

CASE NUMBER I

I. Personal Facts and General Information.

The first man I shall introduce in this case study is Mr. Jerome Embser of Newton, Illinois. He came to his present position during the summer of 1927. He secured the position upon notification from the department of teacher-training in the university, thru formal application, followed by personal interview with the principal and board of education.

Mr. Embser's preparation for teaching included farm experience from boyhood, a general agriculture course in the University of Illinois, with 21 credit hours of professional training in education. Personality characteristics will be referred to later.

The first work Mr. E. did upon coming into the community was to visit all the projects of the boys in vocational agriculture. These visits were made with Mr. G. H. Sunderland, formerly teacher of vocational agriculture, then being promoted to the principalship of the Newton Community High School. The success of Mr. Embser is due in large measure to the splendid department which Mr. Sunderland had built up, and to the efficient support he has given the department as principal of the school.

II. School Methods.

At the beginning of each school year the teacher of agriculture makes a yearly plan of the subject-matter and the extra curricular activities he intends to follow. Naturally he varies at times from his original plan, but in the main he succeeds in carrying out his plans.

Subject-matter for the courses offered in this department are chosen largely on the seasonal and operational basis following the job analysis plan of procedure. Liberal use of reference books and bulletins is practiced. The Lippincott Enterprise series are used as textbooks. Several types of lesson plans are used by Mr. Embser. One he calls his own consists of *Title* or *Lesson Unit, Aims* and *Questions.*

The following example is submitted:

JOB 8: SECURING BABY CHICKS

I. Aim: 1. To teach farmers to select the best stock when setting eggs or buying chicks.

2. To teach when to buy chicks or set eggs.

II. Local Conditions: 1. A large number of farmers still raise chicks with the hens.

2. Some farmers buy baby chicks from commercial hatcheries.

3. Some farmers set their own eggs in commercial hatcheries, and brood the chicks in a brooder.

4. A few buy mature pullets.

III. Problems and Questions: 1. Which is the most economical way, buying baby chicks, setting eggs under hens, or in a commercial incubator, or buying mature pullets?

2. What is the approximate cost of producing a pullet?

3. What precautions must be taken in setting the eggs and handling them before setting?

4. Percentage of hatch farmers here usually obtain?

5. Precautions to take in running an incubator?

IV. References: 1. I. H. C. Bulletin—Farm Poultry.

2. Productive Poultry — Lippincott. Pages 312-347.

3. Livestock Enterprises — Lippincott. Pages 406-414.

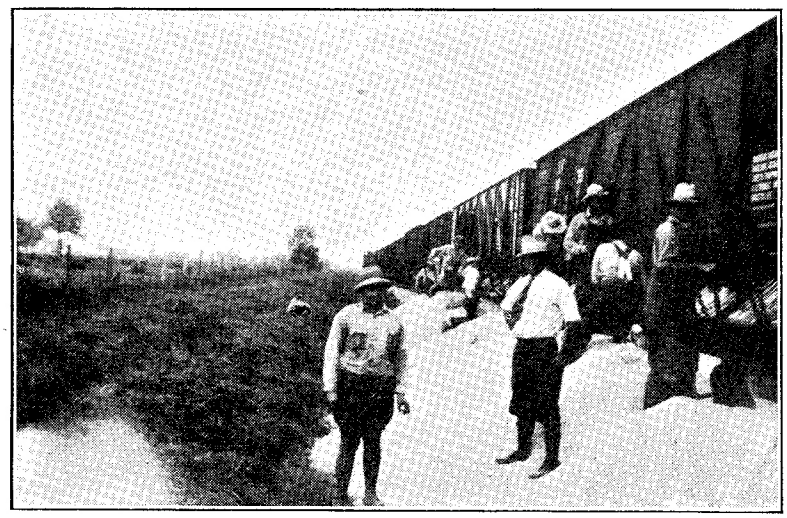
Occasionally the teacher uses the whole 90-minute class period for recitation and discussion. At times he divides the class into groups for supervised study, assigning to each group a special topic for report to the whole class. Some of the periods are used for laboratory work. The method of procedure depends upon the character of the job and the circumstances. Mr. E. never fails to give the class the actual job to do, if it is at all possible. His motto is, "To learn by doing." There is an excellent supply of reference books and bulletins for use in supervised study. The bulletins are all numbered and filed in classes. For example: Dairy—from 1-400; 1-100 is Breeds, 100-200 is Feeding, 300-400 is Care and Management, etc. A list of the bulletins is posted to the door of the bulletin case, with name and number.

III. Project, Field and Community Activities.

Twenty-three farm projects were under supervision last year: 10 poultry, 2 sow and litter, 5 corn, 2 soybean, 2 red clover, 1 alfalfa, and 1 potato. The teacher averaged at least one supervisory visit to each project every 10 days. The stage and condition of the project, and the needs of the boy were factors determining the frequency of farm visitations.

During the past summer the teacher of agriculture devoted the major portion of his time, in addition to project visitations, to the handling of limestone and the harvesting of sweet clover. There were shipped into the community last year 63 cars of limestone, 35 of which were dumped along the right of way, within a few miles of where it was to be used. One hundred sixty acres of sweet clover were harvested by the teacher and his agricultural students.

There is a seed house on the school grounds, making possible much valuable community service, and a source of revenue for the active agricultural club of the school. The seed house equipment consists of a scarifier worth about $50 with a capacity of two bushels an hour; a clipper cleaner and sieves, worth about $700, for all kinds of seeds; a seed treating box worth about $15, and elevators and motors worth about $250.



Mr. Embser supervising the dumping of one of the sixty-three cars of limestone brought into his community

The agricultural club receives for scarifying and cleaning sweet clover seed, 75 cents a bushel; all other seeds are cleaned at a price ranging from 5 cents to 20 cents, according to the amount of time required to do the work. The club receives 5 cents a bushel for treating seed, and the farmers furnish the material for treating if they can, usually, however, the club furnishes the material and charges for the actual cost.

Last year, 1927-28, the boys cleaned and scarified about 150 bushels of sweet clover seed; cleaned and treated 125 bushels of wheat; cleaned 75 bushels of oats; graded and treated 90 bushels of corn; cleaned 40 bushels of beans, 30 bushels of red-top, 60 bushels of timothy, and 45 bushels of alsike clover. The funds collected by the club in this way are used to pay for the labor, and actual expense of doing the work. Members of

(Continued on page 15)

The South's New Master Teacher

By F. T. MITCHELL, Assistant Supervisor, Arkansas

FRED A. SMITH, vocational agriculture instructor at Dardanelle, Arkansas, has been selected as the Master Vocational Agriculture Teacher of the Southern States. Each state selects its own master teacher, prepares a brief showing the achievements of the teacher and submits it to the Southern Regional Agent for Vocational Agriculture at Washington, D. C. The factors considered by the judges are such as enrollment, supervised practice program in operation, methods of instruction, classroom equipment and group leadership activities.

On the question of enrollment Mr. Smith has the greatest number ever reached by a vocational agriculture instructor in Arkansas. There are 76 high school boys and 119 adult farmers enrolled. Mr. Smith has an assistant teacher of vocational agriculture and a full-time stenographer. Both groups carry on supervised practice programs and are regularly visited by the instructor. These adult farmers all come from the trade territory of Dardanelle and have studied such unit courses as dairying, poultry production, fruit and vegetable growing. These classes have been responsible for the increase in dairy development around Dardanelle. During the year just closed, the project labor income of these students in Mr. Smith's classes has amounted to nearly $40,000.

During the three years that Mr. Smith has been at Dardanelle his slogan has been "Cow, sow and hen." Attention to these phases, mixed with sensible diversification, has brought both interest and prosperity. Mr. Smith has been responsible for the location of a community hatchery at Dardanelle, and under his direction the farmers' income from poultry has increased from $21,500 in 1926 to $48,650 in 1928.

Fred A. Smith

The dairy development around Dardanelle under the leadership of Mr. Smith has been nothing short of phenomenal. During the past three years 756 grade and purebred Jerseys have been imported. Farmers have been urged to "grow" into the dairy business by providing pastures and growing feeds. Fifteen bull blocks have been organized and a purebred bull from a high producing dam has been bought for each block. In due time the bulls will be rotated among these blocks. The income from cream checks alone in the Dardanelle trade territory was increased from $42,500 in 1926 to $73,540 in 1928. The first dairy show ever held in Arkansas was conducted by Mr. Smith at Dardanelle last July with 233 animals exhibited. The Dardanelle Chamber of Commerce offered liberal prizes and paid mileage on every animal exhibited, the total mileage amounting to $600.

In addition, the Dardanelle trade territory boasts of 300 acres of improved pasture, 240 acres of strawberries, 96 acres of apples, 110 acres of peaches, 16 acres of grapes, all of which has been the result of organized instruction given to adult farmers by Mr. Smith.

As an evidence of the fine cooperative spirit between the business men of Dardanelle and farmers of the Dardanelle trade territory, an educational tour was made of the dairy sections of Northwest Arkansas and Southwest Missouri, covering 700 miles. The business men of Dardanelle furnished cars and living expenses for the farmers, and the farmers bought gas and oil for the cars.

Mr. Smith is a native of Arkansas, a graduate of the University of Arkansas, class of 1925, and has taught vocational agriculture for 3½ years at Dardanelle.

As a reward for this signal honor that has come to Mr. Smith, the Chilean Nitrate of Soda Educational Bureau has awarded him a handsome gold watch, and will also take him as their guest on an educational tour to New Orleans, to the Agricultural Workers' Convention at Houston, and to the Rio Grande Valley and Old Mexico.

Yearly Activities of a Junior Farmers Organization

By LEROY CLEMENTS, Vocational Agriculture Instructor, Beatrice, Nebraska

ONE of the most helpful enterprises any vocational agriculture department can attempt is the starting of a Junior Farmers' Organization. It will not only be a great benefit to the boys themselves, but also to the school and the community.

The Junior Farmers' Organization of the Beatrice high school is composed of members and alumni of the vocational agriculture department. Officers were elected at the first meeting which was held in January, 1928. Since that time regular monthly meetings have been held, during the summer as well as while school was in session.

A constitution was drawn up and adopted, and a program of work was outlined for the year. This program included a plan for each meeting and a special committee for working out each program. In this way each member knew in advance when he was to work on a committee and what kind of a program he was to prepare.

Much interest was aroused during the winter meetings by organizing basketball teams in the different classes, as well as an alumni team. Whenever a game was scheduled between the vocational agriculture department and the vocational agriculture alumni, a large crowd was present at the meeting.

We have been especially fortunate in obtaining speakers and entertainers who are specialists from the College of Agriculture. They have willingly donated their services. Among those with whom we have had the privilege of becoming acquainted are Mr. C. A. Fulmer, state director of vocational education; Mr. J. H. Pearson, supervisor of Smith-Hughes agriculture; Mr. H. E. Bradford, principal of the Lincoln school of agriculture; Professor Homer Swenk, state entomologist; Professor W. J. Loeffel of the University of Nebraska animal husbandry department; Mr. Ray Magnusen, a senior in the agricultural college, and others of equal importance.

We are trying as one of our objectives to be of service to the community in a number of different ways. One method is by holding open meetings to which farmers and other business men are invited. One of our most successful open meetings was held in the late winter when Professor Swenk, state entomologist, gave a very interesting illustrated lecture on "Insects in Relation to Agriculture." This lecture appealed to the adults and brought to their attention in a vivid way the worthwhileness of our organization.

At a later meeting the organization gave an entertainment for the members of the Chamber of Commerce, Rotary and Kiwanis clubs of the city. A little playlet entitled "The Trial of the Soil Robber" was presented by the boys. A large number of men enjoyed the program.

To show their appreciation, the Kiwanis club later invited all of the Smith-Hughes boys of Gage county to be present at a noonday luncheon with them. Seventy-five boys from the four Gage county schools enjoyed a good time and a splendid talk by Mr. O. H. Liebers,

(Continued on page 13)

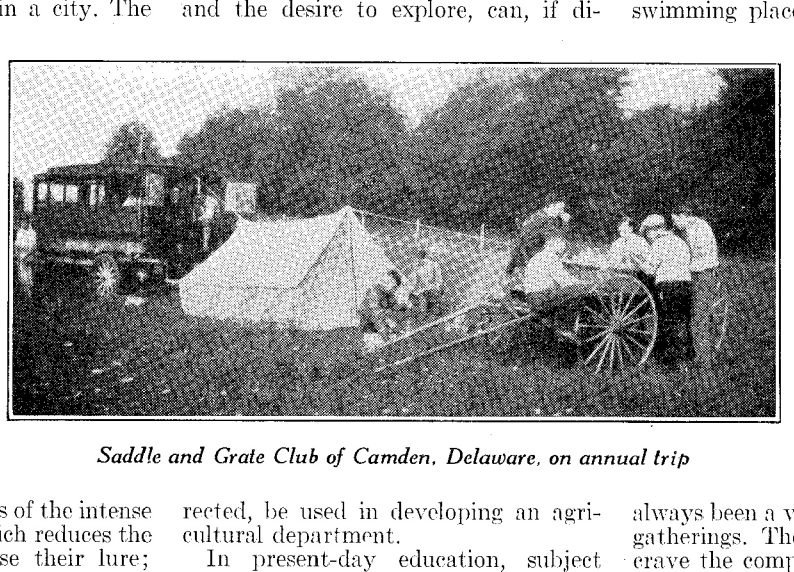
Building Correct Attitudes

GEORGE BUTLER, Caesar Rodney School, Camden-Wyoming, Delaware

CAPITAL, ambition, health, judgment, and correct attitudes are necessary for success in farming. The agricultural teacher spends much time developing correct attitudes, sometimes using a circuitous route to gain the desired result. We all suffer at times from the illusion of the near, in other words we feel better suited to some other place or some other work, we crave new experiences. It is not surprising therefore to hear a boy say, "I'll not be a farmer." Twenty years later with opportunity gone, he may decry his lack of vision. Vocational agriculture is the first attempt, on a large scale to train our youth countryward while in high school. But our efforts will amount to little unless we can develop enough perspective to enable the boy to realize his likelihood of failure in a city. The word failure is here used to mean a lack of satisfaction in pleasure and material gain. What are the chances of success or failure? A certain large life insurance company presents data to prove that every hundred healthy young men at 25 years of age will, 40 years later, or at age 65, be distributed as follows: 5 rich, 5 self-supporting, 36 dead and 54 depending on charity or relatives. So much for the material side of life. In the city people are sorted very closely and one becomes conscious of the intense struggle for existence, which reduces the pleasure; the movies lose their lure; in the end city life becomes monotonous. Of course, it does little good to present these facts, forcibly, to boys because each would imagine himself to be in the well-to-do group, for whom life apparently grants much compensation. Therefore we must approach the matter from another point of view. Since likes and dislikes largely govern our lives we must induce the boy to like country life and prefer it to city life.

It is a well known fact that rotation of crops tends to correct unfavorable chemical conditions in the soil. It is also well known that friction will cause various substances to become charged with static electricity, frequently causing damage, unless grounded. In a similar way, the boy needs something to neutralize the unwholesome effects of too much monotonous labor. Some unadulterated pleasure from the boy's points of view should be provided.

A great biological phenomenon is found in the fact that assimilation of food creates energy that is used in the pursuit of happiness. Everyone has observed the countless hours children and young people will spend at games. Again natural curiosity causes an individual to explore his environment. These facts seem commonplace yet social instincts and the desire to explore, can, if directed, be used in developing an agricultural department.



Saddle and Grate Club of Camden, Delaware, on annual trip

In present-day education, subject matter, tho very important, is not the only consideration in teaching. The agricultural teacher, who is vitally interested in his boys will soon discover that they want him to share their pleasures. organize their social activities. In spite of all discouragements, a club will survive if one does not expect too much of it. If a club is started a name will be needed. What is more desirable than to choose one that crystallizes out of the group's experience? In the writer's community the boys ride horseback as a diversion in spite of the fact that all their families own cars. Their natural love of the woods made it possible to organize camping trips. From these two activities we made our name, Saddle and Grate Club. Every summer for a week we cook our meals over a grate, which cost 25 cents at a junk shop.

Horseback Camping Trips

Most of our camping trips are not taken on horseback, tho short trips are taken that way in small groups. The big trip, planned for, longed for, and looked forward to by every member of the class is made possible, thru the courtesy of the school board, who permit the use of a school bus. We drive only in the forenoon, cook in the open, camp near some swimming place, which must have the added attraction of being near a town boasting movies.

The social activities of the club are not confined exclusively to these outdoor doings. In the fall and winter, evening stag parties, consisting mostly of table games, have been extremely enjoyed by the club members in their various homes every two weeks on Friday evenings. The mother of the host serves refreshments. Much to my surprise the refreshments have always been a very minor detail in these gatherings. The boys have seemed to crave the companionship of each other and thoroly enjoy it. The idea I have tried to promote is, simple pleasure such as they are able to easily provide without trying to create a set organization top-heavy with form.

The reason I know these recreational activities of my boys have created correct attitudes in them, is that their physical appearance improves, their profanity falls to zero, their conversation as soon as they are rested a little, always turns to their farm activities.

Lastly, farm shop work is a big factor in convincing farmers that vocational agriculture is worthwhile. Farmers take a pride in the construction, repair and overhauling jobs that their boys have done. The farm shop work appeals to farmers because of its practicability and because of the industry the boys have displayed in doing the work.

If in a vocational agricultural training program we are attempting to fit boys for useful farm employment then we cannot overlook the fact that some instruction in farm mechanics is essential. In general, those farm mechanical activities that a farmer engages in, that he cannot efficiently perform without some training should be made the basis of the training program in farm mechanics courses. The mechanical activities farmers engage in can be discovered as revealed by the surveys that have been made.

The Place of Farm Mechanics in the Vocational Agriculture Program

(Continued from page 7)

in farm mechanics an essential part of all vocational agriculture courses is because such training adds to the management efficiency on farms. The cost of machinery and other equipment on a strictly up-to-date farm represents quite an investment. It takes a trained judgment to choose and to buy what one needs to get the best for his money. Development of abilities of farm boys to efficiently choose and buy is an important factor in efficient farm management. Then, too, there occurs on all farms dull seasons and many days on which no field work can be done. Farm repair and overhauling jobs enable the farmer to make profitable use of this time and also that of his hired men. To efficiently direct and supervise the work of hired men in these mechanical activities implies that the farmer must himself be more or less efficient in the work.

The fourth reason for including work in farm mechanics in vocational agriculture courses is because of the value of this work in vitalizing and in motivating the training course. There is not the least doubt but what farm shop work vitalizes and motivates the vocational agriculture course. Farm boys are naturally active young people that enjoy doing things with their hands, and they are generally mechanically inclined. To give them an opportunity to spend a portion of the school day in the shop where they have an opportunity to move about and to use their hands in acquiring skill along useful farm mechanical lines breaks what is often dull monotony of school work and tends toward keeping such boys in school.

Greetings From Minnesota

A. M. FIELD
Professor of Agricultural Education, University of Minnesota

ALL those interested in agricultural education in the secondary schools of Minnesota are pleased at the opportunity of having a publication devoted primarily to the problems of teaching agriculture to rural boys and girls. We pledge our support to this new enterprise and shall be ready at all times to make whatever contributions we can to assure its success.

In Minnesota approximately 28 percent of the people who are engaged in gainful employment are working in one or more of the many farming occupations. No further argument should be necessary in order to point out the importance of providing suitable educational facilities for those who are to enter upon the work of the farm. In Minnesota an attempt is made to reach the various farm groups thru the following school activities:

1. All-day instruction in the high schools.
2. Part-time instruction in connection with the high school program.
3. Evening school instruction in connection with the high school program.
4. Instruction in agriculture in the upper grades of the rural schools or in the upper grades of city schools where a department of agriculture is maintained.
5. Four state schools of agriculture where courses for the instruction in agriculture of less than college grade are maintained.
6. Cooperation in the state program for boys' and girls' club work.
7. Cooperation in the state program for extension work.

Thru the above educational activities it is possible for all the farm folks to have provided for them instruction in agriculture apporpriate to their needs. The part-time and evening school work are provided at a time when the work on the home farm demands the least time. In subsequent issues of this publication each of the various types of work attempted in Minnesota will be described in greater detail than is possible in the space allotment for any one issue.

For the school year 1928-29 there are 57 high school departments where agriculture is taught on a vocational basis. Each of these schools receive state and federal aid to the extent of three-fourths of the salary of the teacher of agriculture. In addition to the 57 departments there are 16 high schools where a department of agriculture is maintained on a state-aided basis. This makes a total of 73 high schools where agriculture is taught by a well qualified teacher of agriculture.

The Need for More Departments

Minnesota has 255 high schools and 370 consolidated schools where agriculture could be taught to the farm boys and girls who plan to engage in farming as a life occupation. The 73 departments now maintained represent less than 12 percent of the possible number of departments that could be provided. It is estimated that there are 188,000 farmers in Minnesota. If we assume that each farmer remains in the active work of the farm for 20 years, we have an army of 9,400 young men entering the occupation each year. During the present school year approximately 3,000 young people are enrolled for instruction in agriculture. If 75 percent of these people enter upon the work of the farm there still remains about 7,500 young men who enter upon the occupation of farming in Minnesota each year without special preparation. The program for vocational education in agriculture should make it possible for all these young men to receive instruction and guidance in the theory and practice of the occupation they are to follow as a means of earning a livelihood.

Vocational Agriculture at the California State Fair

THOSE who would like to secure an enlarged vision of the place of the schools in a state fair, would do well to examine the recently published announcement of public school premium offerings of the California state fair, to be held at Sacramento August 31 to September 9, 1929.

There are 72 pages in this booklet which emphasizes above all the vocational phases of public school work. The premium lists for vocational agriculture alone cover 15 pages.

Grand prizes totaling $425 are to be given the 10 schools providing the best general exhibits. Prizes amounting to $260 are to be given the 8 vocational agricultural departments with the best booths. Two thousand six hundred sixty-eight dollars and fifty cents will be distributed in prizes for project exhibits to students in good standing in the Federation of California Junior Aggies.

The prizes for individual project exhibits are divided as follows:

Crops	$261.00
Farm mechanics	195.00
Poultry	115.50
Hogs	690.00
Dairy cattle	996.00
Beef cattle	162.00
Sheep	141.00
Project record books	108.00

Livestock and dairy products judging contests are held in connection with the fair, for which appropriate trophies and ribbons are provided.

A state fair camp, known as Camp Lillard, has been held each year since 1924 and will be continued in 1929. The camp is a three-day affair, run along semi-military lines. It is limited to agricultural students who, thru meritorious achievement, have been chosen to represent their schools. Not more than four students are allowed for each teacher attending camp and no student is allowed to attend camp more than one year. Students admitted to the camp must meet the requirements of the Federation of California Junior Aggies. Competitive activities are carried out within the camp for which trophies, medals and ribbons are provided.

Yearly Activities of a Junior Farmers' Organization

(Continued from page 11)

secretary of the Nebraska Dairy Development Society.

The meetings during the summer have been as well attended and perhaps more interesting than those of the school year. The June meeting, the first after school closed, was held at the farm home of our president, Rolland Mudge. Professor Loeffel, who has charge of the hog-feeding experiments at the college of agriculture, gave a very interesting talk on "Hog Feeding Problems." The boys were free to ask questions. They obtained much information which has helped them in their project work.

In July we had a picnic at the home of one of our members. A twilight baseball game between the department and the alumni boys was followed by a big picnic supper in the woods. The business meeting was held around a council fire prepared by the committee.

Perhaps the outstanding meeting of the year was held in August, when prospective agricultural students were invited. Seventy farm boys were present. Over half of these were prospective students for the department. These boys were royally entertained by Ray Magnusen, with his banjo, humorous readings and impersonations. Refreshments were served and the boys left with a kindly feeling toward the agricultural department, leaving a rich field from which the instructor may draw his next year's class. The organization will have a membership committee working at school during registration to get acquainted with the new farm boys and help them to enroll in the agricultural department.

In order to vary the programs somewhat and to give the boys a chance to develop all sides of their nature, a social evening was planned for the last summer meeting. Most of the boys pledged themselves to take a girl friend to a party held at the farm home of our president. Undoubtedly this party will be remembered with joy for years to come by these farm boys and girls. After a short business meeting, numerous lawn party games were played. After refreshments were served and the girls had pledged loyalty to the farm boys of Beatrice high school, all departed sorry that the party was over, but more anxious than ever for the fall school term to start.

One of the major activities of the organization is the sponsoring of the Gage county junior fair. A junior fair board was elected and is holding summer meetings to perfect plans for the fair. Junior superintendents were elected by the boys for each department. The entire bulk of the work and responsibility rests upon the shoulders of these young men, some of whom we hope will be the master farmers of the future.

Our New Reviewing Editor

DR. F. W. LATHROP, of the department of agricultural education of the University of Minnesota, has consented to attempt the difficult task of reviewing the books and other publications in our field for *Agricultural Education*.

Dr. F. W. Lathrop

This is an important assignment. It will be his task to cultivate a demand among us for a constantly improving professional literature, a demand so insistent that it will stimulate the production of the publications we so greatly need, and reward those who produce them.

He has been authorized to be genuinely critical in his comments. Indiscriminate praise of everything that comes out gets us nowhere.

Dr. Lathrop has unusual qualifications for this position. Brought up in the east and soundly trained at Cornell University, he has since had many years of experience in the west. He did distinguished work as a member of the New York Rural Survey Commission in 1925. He has been a leading member of the research committee of the agricultural section of the American Vocational Association since that committee was established.

Our readers can assist Dr. Lathrop in his difficult task by sending him copies of books, bulletins, pamphlets and other publications of general interest to the profession. Publishers are requested to supply him with their current publications in agricultural education.

Some Recent Publications

SLAY, RONALD J. *The Development of the Teaching of Agriculture in Mississippi*, with Special Emphasis on Agriculture as a Part of School Curricula. New York. Bureau of Publications, Teachers College, Columbia University. 1928. $2.

Each state should have such a complete and careful record of the teaching of agriculture within its borders. We find not only facts. The lessons of experience are brought out.

One cannot help but feel that most states have learned the same lessons. We note the struggle with "book agriculture" in the elementary school, the rapid turnover of teachers of agriculture, the long continued effort to have projects completed, to mention only a few.

In some respects the problems of Mississippi have been unusual. We get some interesting sidelights on the Minimum Financial Goal. The school farm seems to be more persistent in this state than in some others. There is a good summary of the survey of vocational agriculture as contained in the O'Shea report (Public Education in Mississippi).

This volume closes somewhat like a school survey, i.e., with a series of recommendations. Some of these do not seem to follow from the previous discussion. The final impression is that vocational agriculture in Mississippi has firm foundations. Those interested in the administration of vocational agriculture will find this study enlightening and valuable.

ULLRICH, FRED T. *Our Farm World*. New York. Longmans, Green and Co. 1929.

This book has the sub-title, "A Source Book in General Agriculture." A textbook for teachers in rural schools, seventh and eighth grades of elementary graded schools, junior high schools, and first years of four-year high schools.

The crop and animal enterprises are sub-divided into problems. It cannot be expected that this enormous field will be thoroly covered in one volume but the subject matter is remarkably well selected. The presentation and illustration are good.

Each enterprise is introduced by a consideration of conditions in the vicinity of the school giving a psychological approach. Thereafter the organization has resemblances to the traditional textbook organization.

The book would be more helpful to teachers if the problems were stated in such a way as to appeal to pupils. For example, under corn, Problem VII, "What Is the Composition of a Kernel of Corn?" is not a real problem to a seventh grade boy in its present form.

An excellent list of bulletin references follows each enterprise. The author has purposely selected bulletin references. It is unfortunate that bulletins go out of print as some of these have.

This book leaves the impression that it has resulted from a long and successful teaching experience. Herein lies much of its value.

CAVINS, L. V., AND OTHERS. *Survey of Education in West Virginia*, Volume I. Charleston, West Virginia. West Virginia State Board of Education. 1929. 342 pp.

Vocational agriculture receives very good treatment at the hands of the West Virginia Survey Commission, which has just reported its findings. Thirty-three pages of the report are devoted to agricultural education.

The recommendations of the commission are of particular interest:

1. That the work in vocational agriculture be expanded so that every farm boy in the state may have an opportunity to fit himself for farming if he so desires.
2. That opportunity for intelligent vocational choice be provided thru study and participation in the elementary grades under direction of adequately trained teachers.
3. That the state pay one-fourth of the local teachers' salaries, the local community one-fourth, and the federal government one-half, where approved full-time departments are maintained.
4. That provision be made thru state assistance for continuous superior service in one location. This would do much to decrease the turnover and loss of teachers.
5. That provision be made for state assistance for the teaching of agriculture so as to assure a three-year trial of a department. This, with a scientific basis for location of departments, would do much to stabilize departments.
6. That a specific state appropriation be made for vocational education in agriculture in order to carry out the above recommendations.

A mass of usable data is provided with respect to the vocational agriculture situation in the state. Striking features of the findings are:

All but 10 percent of the teachers teach from one to three classes other than vocational agriculture. The number of girls in classes in vocational agriculture decreased from 48 percent in 1917-18 to 4.8 percent in 1928-29. Eighty-one percent of the present pupils are farm boys. All teachers have the B.S. degree or better, with practical farm experience and special training for teaching. The number of schools offering vocational agriculture has grown from 8 to 51 in the past ten years.

Among the members of the survey commission other than Dr. Cavins were Dr. Charles H. Judd of the University of Chicago and Paul C. Stetson, superintendent of schools at Dayton, Ohio. The section dealing with agriculture was prepared by Mr. John V. Ankeney, West Virginia state supervisor of agricultural education.—*H. M. H.*

Rufus W. Stimson, Pioneer

(Continued from page 4)

Dr. David Snedden, Teachers College, Columbia University, who was commissioner of education in Massachusetts from 1909 to 1916, says:

"Very early in my experience in Massachusetts I became familiar with the splendid work done in the Connecticut Valley by Mr. Stimson. I was confident from the start that the kind of agricultural education needed in Massachusetts must permit the pupils to live at their own homes. In pursuit of this ideal I found Mr. Stimson a very good cooperator, and it is thru him largely that practical suggestions for the home project method were developed."

Mr. Layton S. Hawkins, now of the Rossman Corporation in New York City, was state supervisor of agricultural education at Albany, N. Y., prior to 1917 and was the first assistant director for agricultural education for the Federal Board for Vocational Education. He writes as follows:

"I first came in contact with Mr. Stimson shortly after assuming the duties of specialist in agricultural education in the New York state education department. At this time Mr. Stimson's plan of home project work in agriculture was in its initial stages. It seemed to me to have decided merit and as a result of careful study of his plan we developed a modified form of it for New York state. It is, indeed, a pleasure to acknowledge Mr. Stimson's contribution to the development of the state work.

"It is only fair to say that later on, in connection with my work for the Federal Board for Vocational Education, this same idea was disseminated thruout the United States, and is at the present time one of the features of the national program for vocational education as sponsored by the Federal Board and the various state boards."

Deputy Superintendent L. H. Dennis of the Pennsylvania department of public instruction, who in earlier days was supervisor of agricultural education in that state, writes:

"Dr. R. W. Stimson is one of the pioneers in agricultural education in the United States. Many of us have looked to him for leadership and inspiration in the development of the agricultural education programs in the various states. Dr. Stimson has made a distinct contribution to the social and educational life of rural America."

Professor Paul H. Hanus of Harvard University who was chairman of the earlier commission on industrial education, wrote in 1918:

"Massachusetts has been fortunate in the services which Mr. Stimson has rendered. His development of the 'project' method of teaching agriculture in our rural communities, as contrasted with the 'subject' method, has been much to the advantage of all concerned. He has, of course, been a student of agricultural education in other states and countries, and has known how to render available for Massachusetts the results of his studies elsewhere."

Dr. Lyman Abbott, editor of The Outlook, after a visit to Massachusetts,

published an account of the trip in The Outlook for July 25, 1917. Among other things he says:

"It was a delight to see the pride which these young farmers took in their work, the smiling welcome which they gave to their teacher, the fellowship between the two—born to common interest in the soil and its products—their freedom from all self-consciousness in talking with us strangers, and the exactitude of their knowledge in reporting the results of their work. . . . I am not so much interested in what these boys and girls are doing for the soil as I am with what the soil is doing for these boys and girls. This form of agricultural education seems to me to throw no little light on some of the perplexing problems of our American life. It is a great unifier. It brings the school and the home together; the teacher and the parents together; education and life together."

Mr. C. H. Lane, chief of agricultural education service for the Federal Board for Vocational Education, writes:

"I have always thought of Mr. Rufus W. Stimson, supervisor of agriculture in Massachusetts, as the most outstanding leader in the country with respect to the use of the home project plan in teaching vocational agriculture. Mr. Stimson early took the position that genuine vocational instruction centered in the home practical work of the vocational boys and that the group instruction should be based upon the practical program of the boy on his home farm or other farm."

Professor George A. Works, dean of the graduate library school at the University of Chicago, who was until recently head of the department of rural education at Cornell University, writes as follows:

"It is nearly 15 years since I first became well acquainted with Mr. Stimson. The occasion was a week with him visiting his work. At that time I was much impressed with the intimacy of his acquaintance not only with the work of each school but with the efforts of each pupil. My frequent contacts with him since then has only served to strengthen this first impression. My own opinion is that the program of secondary education in agriculture in Massachusetts and in the country as a whole is under a heavy obligation to Mr. Stimson due to his ability to follow so intimately the work that was under his supervision as well as to counsel soundly when broad problems of policy arose."

Mr. Charles A. Prosser, director of The William Hood Dunwoody Institute, Minneapolis, Minnesota, formerly deputy commissioner in charge of vocational education in Massachusetts, writes the following:

"To the movement for efficient training in agriculture of secondary grade, Rufus W. Stimson has probably contributed more than any other single man. In the early days, he conceived the project method as the basis of the work. All experience as well as the teachings of the habit psychology have demonstrated that we never really learn anything except by doing. We learn to do practical things by practicing them and we learn to do them more intelligently by thinking in connection with that practice.

"Dr. Stimson recognized this as keenly as Rousseau or John Dewey and proceeded to apply the principle to agricultural education. Not only did he preach the idea but with his keen analysis and organizing ability, he developed the courses of study, the schemes of training, the cooperation between farm and school and the policies necessary to carry it out.

"Massachusetts owes much to him, but so does the rest of this country."

It is impossible in this limited space to give all the favorable comments or to develop further the interesting story of a career.

(Written by F. E. Heald, Amherst, Massachusetts, January 24, 1929.)

Successful Teachers of Vocational Agriculture

(Continued from page 10)

the club are paid for doing the work. The balance goes into the general agricultural club fund. This is used for several purposes: Father and son banquets, expenses for trips of judging teams, poultry shows, displays and materials for the agricultural room, motion picture rentals, etc. Many of the extension activities serve the two-fold purpose of providing funds for the agricultural department and for promoting best farm practices in the community.

This is largely a poultry section and the department of agriculture does everything it can to further the poultry industry. The club maintains and cares for a brooder house, supplying hundreds of broilers and pullets to the farmers and people of the community. During the last of each November the club puts on a big poultry show. No entry fees are charged, and a goodly supply of premiums is awarded. Everything is paid by the Ag. Club. At noon on the day of the poultry show a free lunch is served to all exhibitors. Growing out of these poultry shows there was organized a country poultry association.

The Ag. Club does some seed corn selecting and testing. Seed corn is selected from project fields. The boy is paid 50 cents above the market price for his field-selected seed corn. The boys then dry out the seed corn, test it for germination and disease, and sell disease-free, tested corn. The boys do custom testing for the farmers at one cent an ear. All the money thus earned goes into the general Ag. Club fund.

Mr. E. has about 50 boys in his department and in taking care of the day classes in vocational agriculture, in addition to the community service described he has little or no time for 4-H club leadership, but he hopes to be able to develop this phase of his agricultural extension service.

The teacher attends all farmers' meetings in the county whenever possible and gives short talks whenever called upon to do so. He belongs to the Rotary club and the Chamber of Commerce. He finds these relationships mutually helpful. The principal of the school and several members of the school board being members of these organizations, the support of the agricultural department is thereby strengthened.

Evening schools and part-time courses are in the plans for the immediate future. The teacher has provided monthly meetings of farmers on different phases of agriculture. Fairs, father and son banquets, poultry shows, etc., are distributed periodically thruout the year, and these are all loyally supported by the farmers and town people of the community.

All required reports are promptly made to the state supervisor and records of all projects and classroom plans and exercises are neatly and orderly kept by the teacher of agriculture. Mr. E. attends all conferences in his section and the state agricultural teachers' associations in June. He tries to keep up with the literature of his profession, both in the field of technical agriculture and education.

IV. The Teacher and His Job.

Mr. Embser says, "I feel that the teacher of agriculture has the best job in the teaching profession. His work, if properly done, exerts more influence in the community than that of any other teacher. The agriculture teacher's job is one that can be easily slighted, if one cares to do so. It is also one that will require all of your time if you want to give it. If you do anything it is a full-time job, if you don't do anything it is a half-time job."

V. Comments of Supervisors and Patrons.

1. "Mr. J. E. is a natural 'mixer' and is able to meet people of any class with a natural ease. He is able to make people feel instinctively that he wants to help them. He is not afraid of manual labor and instructs by the demonstration method."

2. "The farmers have confidence in him, because he is considered one of them. If a difficult piece of community work is being put over, they usually say, 'Send for Jerry.' He is unusually successful in community campaigns of any sort, because he enjoys the confidence of the people, and is a natural salesman. Citizens here consider the agriculture teacher an indispensable community leader. He may be asked to do anything, and it takes a man with wide experience and considerable common sense to qualify."

3. "In the classroom he is a leader and excels in practical explanations and demonstrations. He has few disciplinary problems, because the boys are kept so busy trying to keep up that they have no time for foolishness. He is well liked, without exception, even by those who are failing."

4. "The same qualities which make this teacher valuable to the community make him a valuable faculty member. He is ready to cooperate in any way, any time. He is also willing to take suggestions, and is well liked by the entire teaching staff."

5. "His success is due to a naturally pleasant personality, combined with a fair degree of scholarship, good common sense, and pep. This is a good combination of qualities that simply cannot be beat."

Mr. Embser has the imagination to see the relationship of his work to the larger aspects of community life and he takes a delight in it. With this larger imaginative point of view, he refuses to be segregated; he enters into the work of the school and community in a spirit of thoro comradeship, and is a willing and efficient worker in the common enterprise of improving the agriculture and the rural life of the community.

At the meeting of the governing board of the California Agriculture Teachers' Association held at Berkeley on December 20, the constitution of the Future Farmers of America was adopted for the state.

Professor L. E. Jackson, formerly of the department of agricultural education at the North Dakota Agricultural College is continuing his work for the doctorate and teaching part-time at the University of Minnesota.

Five Years of Expansion Ahead

By PAUL W. CHAPMAN, Georgia

THE George-Reed bill is a law. It was passed by the House of Representatives on January 28, and signed by the president about a week later.

For the next school year $500,000 will be available to the states. The next year the available funds will be increased by a like sum, making $1,000,000. Other like increases will be made until in 1934 the maximum of $2,500,00 will be reached.

One-half of this money is available for agriculture. One-half for home economics.

For agriculture the money is distributed on the basis of farm population; for home economics on the basis of rural population.

This is the first real federal money home economics has ever had. Thirty-four states get more money under this act than they receive under the Smith-Hughes Act. It will make possible a very great expansion in the home economics program—especially in the rural high schools.

The money for agriculture will, as based on previous growth, make it possible in five years to add from 1,000 to 5,000 schools to the list teaching vocational agriculture. The actual number will be determined by the policies set up by the states for using this money, and by the state appropriations that are made to supplement the funds under the George-Reed Act.

This act, as most teachers of vocational agriculture know, takes its name from Senator Walter George of Georgia, and Daniel A. Reed, Dunkirk, New York. Mr. Reed is chairman of the committee on education in the House of Representatives. The bill was originally introduced in the House by Dr. Franklin Menges of Pennsylvania. To take care of changes in the wording of the act, as changed by the Federal Board for Vocational Education, at the suggestion of Secretary Jardine, the bill was reported out of the committee on education as a committee measure under the name of the chairman.

This law will greatly stimulate the development of vocational agriculture.

It does not provide all the funds asked for—but as Judge Tarver of Georgia said on the floor of the House, "Half a loaf is better than no bread."

The thing for vocational agriculture workers to do is to plan a five-year period of expansion—using all the funds this bill provides. *If we do good work the future will take care of itself.* There is no reason to worry because we didn't get the $6,000,000 we needed.

Now that it's all over, after the American Vocational Association fought hard for more than a year to pass this measure, we can look back and see where we stand.

The most important thing we learned is that we have friends. All over the country they came to our aid. Let's thank them for what they did for us.

In closing I cannot help but say that the passage of this bill was brought about by the everlasting effort of people everywhere who have consecrated their lives to the task of getting an even break for the farm boys and girls of this nation. We were told that this bill couldn't pass. We can do anything that's right if we work hard enough. *May that always be the spirit of vocational agriculture.*

A New Opportunity for Farm Boys

By DR. C. H. LANE,

Chief, Agricultural Education Service, Federal Board for Vocational Education

THE passage by Congress of the George-Reed Bill is a large factor in establishing public Vocational Education in Agriculture in the minds of our people as a great national undertaking in which the states cooperate to provide something of fundamental importance for the welfare of the more than 29,000,000 people who live on the land.

Vocational agriculture is becoming the great constructive tool of modern rural civilization. A quarter of a century ago agricultural instruction in the public school was of but small importance in the life of the state; today its proper maintenance on a vocational basis is becoming the prime essential to a balanced education for those who live in the open country. In this 25 years agriculture in the schools has been transformed from a little agricultural science of a textbook character into a great state and national undertaking for the preservation and advancement of the intelligence of the rural people and the promotion of the welfare of the nation.

The George-Reed Bill means an added opportunity for farm boys and girls. So, in the words of Walter Malone:

Wail not for precious chances passed away,
Weep not for golden chances on the way,
Each night I burn the records of the day,
At sunset every soul is born again.

Allotment to States for Agricultural Education Under the George-Reed Act

STATES	Annual Increase of Federal Funds Available Under George-Reed Bill	Maximum Federal Funds Available Under George-Reed Bill in Year 1934
Alabama	$ 10,060	$ 50,300
Arizona	620	3,100
Arkansas	8,620	43,100
California	4,580	22,900
Colorado	2,160	10,800
Connecticut	920	4,600
Delaware	390	1,950
Florida	2,260	11,300
Georgia	11,300	56,500
Idaho	1,490	7,450
Illinois	8,590	42,950
Indiana	6,880	34,400
Iowa	8,210	41,050
Kansas	6,050	30,250
Kentucky	10,030	50,150
Louisiana	6,010	30,050
Maine	1,650	8,250
Maryland	2,150	10,750
Massachusetts	1,290	6,450
Michigan	6,830	34,150
Minnesota	7,550	37,750
Mississippi	9,740	48,700
Missouri	9,440	47,200
Montana	1,580	7,900
Nebraska	4,890	24,450
Nevada	150	750
New Hampshire	670	3,350
New Jersey	1,200	6,000
New Mexico	1,270	6,350
New York	6,620	33,100
North Carolina	12,480	62,400
North Dakota	3,220	16,100
Ohio	8,900	44,500
Oklahoma	7,980	39,900
Oregon	1,810	9,050
Pennsylvania	7,860	39,300
Rhode Island	160	800
South Carolina	7,870	39,350
South Dakota	3,120	15,600
Tennessee	10,120	50,600
Texas	18,240	91,200
Utah	940	4,700
Vermont	980	4,900
Virginia	8,460	42,300
Washington	2,490	12,450
West Virginia	3,930	19,650
Wisconsin	7,710	38,550
Wyoming	530	2,650
TOTAL FOR ALL STATES	**$250,000**	**$1,250,000**

Note: The sums set forth here are not absolutely accurate for the reason that when they were prepared by the Federal Board for Vocational Education the George-Reed Bill did not provide funds for Hawaii, consequently each allotment will be slightly reduced.