AGRICULTURAL EDUACATION

by

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I. Introduction

Governor Hoard in his address at Fort Worth, Texas, in 1898 raised. these questions: !11fJhat can we do to help emancipate this great business of farming from the lack of comprehension? What can we do to get the farmers of this continent to see the necessity of mo1~e intellect on the farms? How can ·we contribute as a force to help in the emancipation of the farm from the wasteful effects of ignorance, and. help put in its place the energizing and enriching influence of knowledge? In other words what can we do to promote wise legislation to this end? What can we do to arouse public opinion and the great educational forces of the country to the importance of teaching the elements of agriculture in the primary and secondary schools of this land? Our present system of agricultural education is an image with a head of brass, a body of iron and feet of clay. Our common schools recruit the academy, the college and the university and they in turn recruit every profession but farming. Our young men flee to the towns and cities because we have educated them to do so. Nearly every European country is putting forth strenuous efforts to stay this tendency by teaching the elements of scientific agriculture in the common schools. It can be done as easily as the teaching of the elements of scientific arithmetic, or chemistry or philosophy. A great host of farmers who were deprived. of such teaching now find. themselves barred from an understanding of much agricultural literature. AEJ a consequence they turn away from the agricultural college, the experiment station bulletin, and. the farm paper.

Had these men been taught in the common schools the meaning of the terms used in Agricultural chemistry, something of the principles of animal husbandry, something of the principles that underlie the preservation of land fertility, they would be today in much more harmonious relation with all that constitutes agricultural progress.

Just thirty-six tears before· Governor Hoard voiced these words, Abraham Lincoln turned aside from his warlike duties, and signed the greatest educational act in all our history -the bill establishing what are known as Land Grant Colleges. The great emancipation proclamation unshackled the bodies of four million slaves. The Morrill Act laid the foundation for freeing the minds of many more millions of farmers. It made possible the supplanting of tradition by reason, of haphazard by systematic work, of wasteful by economic methods. It stands as a national protest against teaching the men symbols and formulas of knowledge. It is an attempt to turn at least aa part of our educational effort toward t11e things in science that really make for all that we think of when trying to portray our civilization. Our clothing, our habitations, our means sustenance, with their appropriate embellishments occupy a larger place in our attention when thinking of civilization than does the culture of the mind merely. More than fifty years ago Herbert Spencer said of the English schools, “The increasing acquaintance

with the laws of phenomena, which has through successive ages enabled us to subjugate Nature to our needs, and in these days gives the common laborer comforts which a few years ago kings could not purchase, is scarcely in any degree owed to the appointed means of instructing our youth. The vital knowledge -that by which we have grown as a nation to what we are, and which now underlies our whole existence, is a knowledge that has got itself taught in nooks and corners; while the ordained agencies for teaching have been mumbling little else than dead formulas.” Both these men were

imbued with the thought that the education which makes for the mastery of nature must also make for the betterment of man.

Another significant factor in Governor Hoard's questions is that he considers farming an intellectual as well as a manual pursuit. “Ignorance,” he says, “stands as a bar to the farmer’s progress, hence, educate.” As he looked back at the organized agency for doing the work of education, the common school, he must have been disappointed by the lack of enthusiasm, insight, and purpose for the new movement.

A great deal has been written and said complementary to the public schools of the United States, concerning their high standing and progressiveness, as indicated by the constant adoption of new and better methods of teaching and of better buildings and equipment. A general impression has been created that there exists an American School System which is efficient and nationwide, with equal educational opportunities in all parts of the country. The impression is erroneous. It is probably true that the public schools, both urban and rural, have made considerable progress, but the marked progress has been confined almost wholly to the city and town. During the past three decades the American rural school has in most States made little progress except that resulting from the activities of the past ten years. Opportunities for education in most of the rural sections of the United States are exceedingly meager, in comparison with the opportunities offered in cities. The city systems of schools are approximately similar throughout the United States. Outside of the cities, however, there is no uniform system.

In the city system, school affairs are usually well managed, the schools are supervised by trained educators, and are taught by well-educated and professionally trained teachers. The schoolhouses are modern, and well equipped with adequate furnishings and facilities for teaching. On the other hanc1 it is generally true for the United States as a whole that rural schools lack intelligent anc1 economical management, adequate supervision and efficient teaching. The majority of them are housed in uncomfortable buildings, unsuitable from almost every standpoint, without proper furniture or facilities for heating, ventilating, and lighting; without adequate provisions for' guarding the health and morals of children, and with comparatively little equipment for teaching.

The attention of our best educators has during the past half century been devoted to the development of the city school. The country has been left largely to itself. The development of the city school has in a measure retarded the country school, as the city has drawn, and is continually drawing, the best teachers away from the country. A program course of study, system of grading and textbook have been developed for city schools, all in large measure suitable for the schools whose conditions cause their development. In too many instances those courses and methods have been thrust on to the country school, which exists under conditions entirely· different from those surrounding the city school; it is needless to say that they have proved unsatisfactory.

“Attention is now being turned toward. the neglected schools of the open country. An attempt is being made to redirect their work by the addition of new studies to the curriculum, but the redirection must be more fundamental. Reform must begin with management. No extended progress is possible unless the school affairs are wisely administered. Supervision must be provided. No extended improvement in the quality of the teaching is possible without proper oversight and guidance, trained teachers must be obtained and means of training provided.

The instructional work of the school must be in some way readjusted to the needs. This readjustment in the course of study, the arrangement of the program, and the classification of the pupils can be intelligently made only when a comprehensive understanding exists regarding the management of the school and the economic and social conditions which ae outside of the school itself, but which affect the affairs and work of the school.

Few realize the magnitude of the rural education problem now before us. It is not generally known that illiteracy in rural territory is twice as great as in urban territory. This is in spite of the fact that thousands of illiterate immigrants are crowded in the great manufacturing and industrial centers. The illiteracy among native-born children of native parentage is more than three times as great as among native children of foreign parentage, largely on account of the lack of opportunities for education in rural America, in which comparatively few immigrants live. Few know that approximately sixty-two per cent of the total school enrollment is in rural schools, out that the rural aggregate attendance is only fifty-one percent of the total aggregate attendance; that about sixty percent of those in rural schools are in one-teacher country schoolhouses, and that the instructional work in the average one-teacher country school is of very low grade. “*

PLAN OF THIS THESIS

With this information at hand, showing us the timeliness and importance of the country life movement at the present time, the writer has planned first to make a study of the history and growth of agricultural education from the earliest times down to the present. In this way it is hoped the magnitude of the movement may be shown and if possible, the more important problems confronting our educational institutions in making this new adjustment discovered. A discussion will then be made of these problems to see if some light may be shed on the possible ways of their solution. "
U.S. Bureau of Education, Bulletin #8.

1. History of the Movement
    1. Earliest Growth

Several hundred years before Columbus discovered America there were in many parts of Europe great religious institutions known as monasteries, which had in their possession many acres of land. In those institutions manual labor was first recognized as a necessary part of an educational system, and. the monks were required to cultivate the land around the monasteries in which they lived. In their work and methods, the monks furnished models for the peasants of Europe and introduced among them better seed and plants.

Before the first settlement was made in America certain principles of plant growth were published in England and were recommended to be taught in the schools of that day. But it was not until near the close of the eighteenth century that the attention of practical men began to be directed to the discoveries of science and hopes began to arise that man would learn something valuable about the vast possibilities of the soil.

Necessity was driving the nations of Europe to study the possibilities of the land because the food supply was often short, and famine made frequent appearances. But America was new and possessed such a vast area of fertile land that little attention was paid to the conservation of the fertility of the soil. It took the early colonists several generations to learn that there was any limit to its productiveness.

One of the earliest proposals in this country to regard agriculture as a fit subject for higher education is found in a prospectus issued by William Smith, in 1751, designed as a model for colleges. This plan, providing for the chemistry of agriculture, was carried out more or less fully at Philadelphia Academy (University of Pennsylvania). We find Husbandry and Commerce mentioned in the original prospectus of King's College (Columbia University), dated May 31, 1754, and Agriculture and Merchandise in the laws and orders adopted by the governors, June 3, 1755. The chair of botany and agriculture in 1792 was held by Samuel Latham Mitchell, M. D. In 1794, in describing a summer course in botany, he says, "An attempt is made by the professor, who is a practical farmer, to elucidate and explain the economy of plants, their affinity to animals, and the organization, excitability, stimuli, life diseases, and death of both classes of beings. The physiology of plants is therefore particularly enlarged upon, as connected. with gardening and farming."

One of the best instances of the actual uses of agriculture and other industrial work in an educational way for pupils of elementary and secondary school age is furnished by the schools established at New Harmony, Indiana, in 1825, by William Maclure, in connection with his socialistic experiment known as the New Harmony Movement. Maclure placed the schools in charge of Joseph Neef, whom he had brought to Philadelphia in 1806 to introduce Pestalozzi's method of teaching. He provided ample dormitories, books, museums, shops, experimental plats, and other facilities. The experiment was short-lived, suffering from the spirit of religious intolerance on all sides, while the location so far from the older centers of intellectual life was largely responsible for the slight impression the schools made on educational practice.

A pioneer· movement in agricultural ec1uoation anc1 one that lasted. much longer than many others, though not much noticed in the literature of agricultural education, was the Oneida Manual Labor Institute, conducted by George Washington Gale from 1827 to 1834, and including instruction in carpentry and agriculture. This extended effort followed a few years' experience with a number of boys who were taken on to a farm near Whitesboro, Oneida County, New York, to which he had retired from the ministry on account of ill health. He later established Knox College, at Galesburg, Illinois.

A Manual Labor Academy was conducted from 1830 to 1832 at Germantown, Pa., by George Junkin, who was later the first president of LaFayette College.

Sporadic attempts, more or less futile, were made to introduce regular instruction in agriculture as a part of the school curriculum early in the last century, as at Dummer Academy, Newberry, Mass., 1824, Derby, Conn., 1824; Teachers' Seminary, Andover, Mass., 1838; The Peoples' College, Montour Falls, New York, 1853; Westfield (Mass.) Academy, 1856; and Powers Institute, Bernadston, Mass., 1857. The opening of Bussey Institute founded by a bequest made in 1842, was delayed by Harvard College until 1870. That commendable philanthropy, the farm School, Thompson's Island, Boston,

now ninety-eight years old, began instruction in agriculture in 1833, and has since continued it. Work of recognized merit was inaugurated at the Sheffield Scientific School, Yale, in 1848, by the establishment of a chair of agricultural chemistry and vegetable and animal physiology. " *

2. Federal Aid

The first steps looking toward a comprehensive study of agriculture, and toward educational training in the use of processes of agriculture, were taken in the campaign of the early sixties that ended in the

great Congressional Land Act of 1862. This Act, more commonly known as the Morrill Act is considered the 'organic law' of the Department of Agriculture. Most of the present large list of agricultural and mechanical colleges were founded as a result of this famous legislation. Of the few colleges already in existence before this date, the Michigan Agricultural College, opened to students in 1857, is the oldest. This Act gave to each state an endowment of lands, (30,000 acres for each member of Congress), for the establishment and maintenance of State Colleges of Agriculture and Mechanic Arts. From this have resulted endowment funds amounting to $12,000,000 with $8,000,000. worth of land not yet sold. Later acts of Congress, the Hatch Act effective in 1887, by which Congress provided for each State and Territory an annual appropriation of $15, 000 with which to maintain an agricultural experiment station; Morrill Act, 1890; Adams Act, 1906, and Nelson Act, 1907, have appropriated sums of regularly increasing amounts which in 1914 aggregate more than $80, 000 annually for the *Columbia University Contributions #39, by C.H. Robison. agricultural colleges and experiment stations of each state.

The most recent legislation for the benefit of Agricultural Colleges is the Smith-Lever Act passed by Congress on May 8, 1914. The Act provides for the granting of federal funds to the state agricultural colleges to "add in diffusing among the people useful and practical information on subjects relating to agriculture and home economics."

Each state in which an agricultural college is designated shall receive as a basic fund from the federal government, $10,000 annually without additional appropriation from the state. The act then makes provision for additional appropriations to be distributed in the proportion which the rural population of each state bears to the total rural population of all the states, as determined by the next preceding census.

To share in the additional money, however, the state, either through state, county, college, or local funds, or from individual contributions from within the state, must duplicate the additional amounts granted by the federal government for the maintenance of the co-operative agricultural extension work provided for in this act.

The federal money to which each state becomes entitled will be paid in equal semi-annual payments on the first day of July and January of each year.

The additional appropriation provided for in the act are as follows: Six hundred thousand dollars for the fiscal year following that in which the basic appropriation first becomes available. This $600, 000 will then be increased by $500,000 for each succeeding year thereafter for the seven years, until the total additional sum appropriated is $4,100,000 annually. This sum and. the annual basic appropriation of $480,000 will then be available each year thereafter.

By June 30, 1909, there had been paid to the land-grant colleges by the Federal Government an approximate total of $23,000,000.

The State Legislatures have also contributed to ever growing amounts to the Federal funds devoted to building up a science of agriculture, and to the much greater work of carrying this new knowledge to the people. There has been thus spent something less than $100, 000, 000 on agricultural research and education, a major part of it, during the last twenty years.

The value of all property of the land-grant colleges on June 30, 1909, was $111,882,686.96 including permanent funds amounting to $34, 285,131.71, and their total income was $18,082,853.55. Out of

26,686 while collegiate students, 7,038 were in agricultural courses of all kinds or home economics, while 10,409 were in corresponding “short courses.” The enrollment in the engineering courses increased 14 per cent from 1906 to 1907, while that of the agricultural courses increased 25 per cent. In the following year the increase in the enrollment in the agricultural courses was 14 percent while the enrollment in the engineering courses was practically at a standstill. There were 19,170 agricultural students in 1911, a 10 per cent gain over 1910.

3. Present Agencies of Agricultural Education

'The earliest organized form of agricultural education is to be found in the farmers’ club and societies started in the older States at a very early day, and later in the arrangement now generally known as farmers' institutes, by which speakers were provided through a central authority, either for these local societies or for general meetings. We find the Pennsylvania Society for Promoting Agriculture as early as 1785. The Massachusetts Society for Promoting Agriculture tried, as early as 1796 and 1800, to act as a medium for the exchange of ideas and discoveries in agriculture and for their spread throughout the State.

Much of the work has been under the direction of state boards of agriculture, which have acted as central bodies to direct farmers’ institutes, manage state fairs, and carry on investigations and tests. Since 1903 Federal aid has been given for the promotion of the farmers’ institute. The agricultural colleges have conducted “short courses” of from one week to several months during winter, which are open to all, offer correspondence courses and run “corn specials,” “wheat specials, ““dairy specials,” and “alfalfa trains.” These are traveling schools and consist of a train of several cars fitted up as small museums, lecture rooms, and quarters for the instructors. Stops are made at small stations on the railroad according to advertised schedules for a short time varying from several minutes to a few hours. Another form of college extension work consists in the boys’ and girls’ club contests for the exhibition of corn or other farm products.

No less wonderful than the development of the agricultural college has been the rapid growth within the last two years of the agricultural movement in the elementary and secondary schools of our public school system. Instruction in the beginnings of agriculture is now, required in the elementary schools of Alabama, Arkansas, Florida, Georgia, Louisiana, Maine, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, South Dakota, Texas, West Virginia, Indiana, and Wisconsin.

4. Present Status of Agricultural Education

There have been two results arising from this movement, which, operating together, make an epoch in country life. The development of a wonderful body of scientific knowledge of farming and farm home making has been well begun and the organization for conveying this inspiring and effective knowledge to all the people has been well started.

The indications are that during the next twenty years plans for extending agricultural research and agricultural education must provide for the expenditure of additional tens of millions of dollars of public funds annually. The fact that the net economic result alone may be additional farm products worth hundreds of millions annually is year by year forcing upon those in authority the necessity of expanding our facilities for gaining and diffusing a knowledge of good farming.

The national and. state departments of agriculture, the state universities and state colleges, the state experiment stations, the agricultural high schools, and the branch experiment stations, with their researcher and their extension of instructional demonstration work to thousands of localities are making a combined effort of stupendous proportions. They are winning the hearts of the American farmers with new interest in farm subjects and are adding efficiency in farm management. The question of the hour, therefore, is one of the methods and direction for this vast movement, with its oncoming tens of millions of increased incomes. Where and how shall most of the needed money be spent? Most surely the maximum expenditure needed in agricultural research will earliest be research while the much larger expenditure needed for agricultural education will be longer in reaching the point beyond which it will not give the optimum percentage of returns. The thorough organization of research work is assured and. Its further development is not a matter of such great concern as is the organization of systems of schools, of extension teaching, and of instruction by demonstration.

That part of our educational system which is of collegiate grade is sufficiently well organized to warrant the belief t its development by easy evolutionary steps is assured. The organization of secondary education for country life is well under way in a great many States. The plan of adopting large agricultural high schools is gaining popular favor among some States. There is good. reason to believe that we shall have a class of high-grade secondary schools providing vocational finishing courses for those who, expecting to live on farms, will close their school life with two to four years of vocational high school work. The success of such schools in Minnesota, Wisconsin, and Nebraska has shown that they are adapted to fit into our school system between the rural school and the agricultural college.

While this movement is of vast importance, there is a larger movement now on foot to establish a system of consolidated rural and village schools, and of course of agriculture in town and city schools so near the homes of the farm youth that something of instruction in agriculture, in home economics, and in social and civic affairs, as well as in the accepted subjects of so called general education, shall be taught to all the boys and girls of the farm. To meet this first need the consolidated rural school in the open country and the consolidation of rural schools about the cities and villages are rising rapidly into prominence along with the vocational high school. Many cities and non-public schools of secondary and higher grade are seeking to add agricultural instruction to their courses of study.

5. The Status of the Rural School

The rural school presents the most important problem in American education. In it are more than six million children coming from one great industry, agriculture - the most fundamental and important of all industries. It demands the highest type of business management and industrial ability. The rural school, the sole educational opportunity of most of our agricultural population, has been grossly neglected. It has been allowed to lag the town and city schools. It has been the victim of changing social and industrial conditions, it has dwindled in size, diminished in influence, and lost step with the spirit of the times. The schools which served the purpose under primitive conditions will not now suffice. Along with the increased demand for skill in the professions, the school has met this demand by supplying the appropriate training. Agriculture today is asking the school to do something for the rural population which may give it increased dynamics. The youth of the country need vocational training along their particular lines and the successful farmers of the future must depend upon the activities and instruction of the rural school to direct them to a proper viewpoint of their future vocation.

The general problem of the rural school is the same as that of any other type of school -to render to the community the largest possible returns upon its investment in education with the least possible waste. In earlier times the value of education was assumed or vaguely taken on faith. Education was supposed to consist of so much “learning” or a given amount of “discipline” or a certain quantity of “culture “. Under the newer definition, education may include all these things, but it must do more; “it must relate itself immediately and concretely to the business of living. ““Efficiency” is the goal of attainment of the present movement.

“This is to say that one’s education must (1) furnish him with the particular 'knowledge' required for the life that he is to live, whether it be in the shop on the farm or in the profession. 'Knowledge' lies at the basis of all efficiency and success in any occupation. Education must (2) shape the 'attitude,' so that the individual will confront his part of the World's work or its play in the right spirit. It must not leave him a parasite, whether from wealth or from poverty ready to prey upon others; ·but must make him willing and glad to do his share. Education must (3) also give the individual training in 'technique,’ or the skill required in his different activities; not to do this is at best but to leave him a well - informed and, well-intentioned bungler, falling far short of efficiency.” *

Each type of school has not only its general problem, which is common to all schools, but also its special problem which makes it different from all other classes of schools. The special problem of any type of school grows out of the nature and needs of the community which supports the school. Thus, the city school, whose pupils are to live the industrial life and social life of an urban community, confronts a different problem from that of the rural school, whose pupils are to live in a farming community. Each type of school must suit its ‘social organization, ‘its 'curriculum,’ and its 'instruction' to the demands to be used by its pupils. While many pupils from the rural schools ultimately follow other occupations than farming, yet the primary function of the rural school is to educate for the life of the farm.

i. The Social Organization

“Every school possesses two types of organization: *” New Ideas in Rural Schools, “by Betts.

1. An intellectual organization involving the selection and arrangement of a curriculum, and its presentation through instruction; and (2) a social organization involving on the one hand, the inter-relations of the school and the community, and on the other the relations with each other and the teacher” *

That there should be a vital connection between the rural school and the community is unquestionable. The rural people need the intellectual and socializing influence of the community school. The country people also need some social center where they can assemble for recreation, entertainment, intellectual growth, and development. The young people, particularly, should be provided with suitable opportunities for social mingling and recreation in groups. The social impulse is very strong in their individual make-ups and if the means are not supplied. for the exercise of this impulse, the boy and the girl become dissatisfied and long for the town or the city where they can mingle and co-mingle with people. The broader the service of the school in the community, the more vitalized its different activities because of the accumulative interests of its constituents.

To my mind, there seems to be no doubt but that the best way of making the school answer the social and intellectual needs of the community, is to affect a consolidation of the small schools. The “little red schoolhouse” has served its purpose and the development of the curriculum together with the increased demand on the part of parents for special instruction for their children, and also the difficulty of supplying trained teachers, for this work, have made it *” Now Ideas in Rural Schools “ by Betts. necessary for the rural population to pay more attention to the centralization of their schools. The new consolidated school should be the neighborhood social center and besides aiming to provide better intellectual training, it should at the same time relate the training to the needs and conditions of the agricultural population. Much of the work of the school has not appealed to the pupils as interesting or valuable. The curriculum in many cases has not been adapted to the peculiar needs of the pupils.

ii. The Curriculum of the Rural School

“Modern conditions require a broader and more thorough education than that demand by former times, and far more than the typical district school affords. If the rural school is to meet its problem, it must extend the scope of its curriculum. The “three R' s are necessary tools, but they are only tools and must be utilized in putting the child into possession of the best and most fruitful culture of the race. And, practically, they must put him in command of such phases of culture as touch his own life and experience and make him more efficient.” *

A modification of the curriculum must be made in which the new studies related to the life and work of the farm are inserted and at the same time enough of the other subjects retained so as to give sufficient foundation and basis for the ‘professions’ if the boy or girl prefers to leave the farm. The rural youth as well as the city youth need all the training that can be given them, to enable them to live *New Ideals in Rural Schools, “by Betts richer lives wherever they may find their chosen life work.

1. The Rural Elementary School Curriculum

The rural elementary school includes the eight grades of school training below the high school.

As a general proposition, let us say that the curriculum of the rural school should contain the basic subjects that belong to all cultures and in addition contain subjects that develop an attitude for the farm. This, then, will include the following subjects: the mother-tongue, (grammar, reading, writing, and spelling) arithmetic, geography and nature study, hygiene, and health history and civies, music and art, physical training, domestic science and manual training, and agriculture. Time cannot be taken to arrange these subjects in definite courses of study, as the idea is merely to show what a well-rounded elementary school curriculum consists of and to also show the inadequacy of the one room district school in efficiently teaching the pupils these subjects. Heretofore agriculture has been left out of the curriculum, but it is preeminently a subject for the rural school. Agriculture as a science cannot be taught in the rural elementary school, but much useful information concerning agriculture can be taught. It is possible to develop a scientific attitude and interest that will lead to further study of the subject in high school or agricultural college, and that will in the meantime serve to attach the boys and the girls to the farm.

2. The Rural High School Curriculum

Not all localities have rural high schools, but they should form an integral part of the consolidated rural school. This high school should be essentially an agricultural high school, offering a broad range of

culture and information and at the same time articulating the course of study requirements made for entrance into the college and university. The course in agriculture must be comprehensive and thorough and of a high standard. The subject matter studied should serve to create and develop a scientific attitude toward farming and should vitally connect the farm home with the school as an excellent medium for scientific information concerning farm problems. Many boys and girls never go to college and the new plan for teaching them this vocational subject seems to answer a long felt need of the rural population. The instruction they receive, gives them a view-point as to the breadth and importance of rural life that will eventually make vital changes in the social, economic, and intellectual life of the country.

iii. The Rural Teacher

The rural teacher is, after all, the chief factor in increasing the efficiency of the rural school. “The school can never become more efficient than the teacher. A first requisite for efficient rural education is well-trained teachers and supervisors. Little has been done in the past to fit teachers for rural work, and the supply of those trained in general professional work has been inadequate to satisfy the urban demand. The total number of public-school teachers in the United States in 1912 was over 523,000; The number of teacher-training courses in universities, colleges, State normal, schools, county training schools, and high schools was approximately 23,000. The average length of service of a teacher is less than five years. It is apparent, therefore, that for not more than one in five positions is a trained graduate available. “*

The call for properly qualified teachers is much greater than the supply. The chief purpose in training men for this work is that they become helpful advisers in some lines of practical farming as well as directors of this very important branch of education in the schools. No other subject now taught requires broader or more thorough training for the work than does the teaching of agriculture. If it is taught merely by showing how to plow, plant, feed stock, make hay, etc., it degenerates into a training of farm hands. But teaching agriculture is much more than this. It is educating a person to know the reasons why one kind of cultivation is better than another, why one kind of feed mixing is better than another, why one kind of seed testing and seed selection is better, than another, why one kind of spray mixture is good. to control insects and another to control fungi. This kind of training is scientific. Both science and the right kind of practice must be taught by the teacher of agriculture.

There is, then, a growing belief that the teacher for rural work should have an educ at ion and training different in some respects from that of the town or city teacher. The rural teacher needs the same courses in education (psychology, pedagogy, etc.,) and the same general courses in methods of *U.S. Bureau of Education, Bulletin #6. teaching. He needs, however, in place of some of the academic subjects of secondary or collegiate grade, additional courses in natural and physical sciences, particularly in their applications, and in nature study, agriculture, domestic economy, sanitation, rural economics, and rural sociology. He also needs rural school management and methods including instruction, by an expert rural teacher, of the ways and means of handling all general and technical school problems. Practice teaching ought to form an important feature of this course and this ought to be done in a rural school located in its natural environment and attended by rural children.

1. Provisions for the Higher Training of Teachers of Agriculture

Many advances have been made within the last two years in the way of preparing teachers to meet the new demands for agricultural instruction.

While the courses provided for in the regular college curriculum must be depended upon to furnish a substantial foundation for the teacher's preparation in the long run, a more important movement, from the standpoint of immediate results, has been the development of the college summer school courses in agriculture.

To the student of education, probably the most significant development in this field has been the spread of the idea, within, the last three years of establishing chairs of education in agricultural colleges, or chairs of agriculture in colleges of education.

Agricultural colleges are making provision for prospective teachers in one of two ways. Students of the regular four-year course in agriculture may elect courses in education given in the agricultural college or in some other college of the university. The second way is for the prospective teacher to pursue a special group of subjects, supposed to be adapted to the special needs of teachers in content or in organization. This special group may require anywhere from one to four years to complete, according to the number of units it contains. It may not and sometimes does not include any pedagogical work.

The state agricultural colleges of Massachusetts, Michigan, North Dakota, and Purdue University use the first plan. The agricultural colleges of Connecticut and North Carolina, and of the University of Maine have the special group of agricultural subjects without courses in education. Michigan Agricultural College has such a course of one year, which presupposes a normal school certificate or experience in teaching.

The state universities having agricultural colleges and colleges of education may affect a reciprocal arrangement whereby the latter may furnish the agricultural college students with facilities for pedagogical training. The state universities of Illinois, Minnesota, and Wisconsin follow this plan." *

Professor F. B. Jenks of the United States Department of Education says, “There are now much better *Columbia University Contributions #39 facilities and much more effective organization for preparing instructors for high school agriculture in at least thirty-seven of the land-grant institutions than there were formerly. This is due in large part to the provisions of the so called “Nelson amendment” to the agricultural appropriation bill, approved March 4, 1907, providing that a portion of the funds appropriated thereby, amounting now to $25, 000 annually, may be used by the land grant college for the special preparation of instructors for teaching elements of agriculture and mechanics arts.”

CONCLUSION

Let it be said in conclusion that there is no question quite so great for the American people today as that of agricultural education. The magnitude of the movement has been shown by the steady growth from its beginning down to the present time. It has also been shown that the rural population is demanding a proper adjustment of its rural life and interests to this movement and that the best avenue for this adjustment is through the rural school. The cry of the rural school is for greater efficiency in organization, curriculum, and instruction. The centralized school, providing as it does for a

well-rounded curriculum of studies is only an important adjunct to the greater problem of securing an efficient teacher. The State School of Agriculture is the logical place for the training of rural teachers and the fact that many states agricultural institutions have established courses in education for prospective teachers goes to prove that a first move has been made in the right direction.

At the present time agriculture as a separate branch in the elementary school curriculum is bound up with the question of differentiating our entire system of education at about the age of twelve. We need clearer ideas regarding the pedagogical principles involved in their period of change and the transition must be slow and well planned. We feel that agriculture should be recognized as an instrument of education in the sense of affording mental training as well as in the sense of furnishing scientific training. The agricultural instruction must be adapted to the community have reason to believe that the day of rural school is dawning. It's a problem that should command the interests of the choicest minds of the age, and if a reorganization and a revitalizing of the rural school be affected within the near future, the best educational influences must be thought to bear upon its problem.

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