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BIENNIAL SURVEY OF EDUCATION IN THE UNITED STATES 1928–1930

CHAPTER VII
AGRICULTURAL EDUCATION

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CHAPTER VII

AGRICULTURAL EDUCATION

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AGRICULTURE IN THE PUBLIC SCHOOLS

FEDERALLY REIMBURSED CLASSES

Expansion, 1928–1930.—Growth of the program initiated by the Smith-Hughes Act of 1917 continued through the biennium. Enrollments in federally reimbursed classes increased from 144,901 in 1927–28 to 188,311 in 1929–30. The greatest gain in enrollment was in evening classes for adult farmers, the numbers in such classes increasing from 35,192 in 1927–28 to 60,462 in 1929–30. High-school classes continued at their normal rate of expansion since 1917, gaining 16,787 pupils from 1928 to 1930, and reaching a total of 113,728 in the latter year. Day-unit and part-time classes remained practically constant in enrollment, reaching, respectively, 9,957 and 4,164 persons in 1929–30.[1]

Table 1 shows the gains in enrollment in each phase of agricultural education since the federally aided program was established in 1917–18.[2]

TABLE 1.—*Enrollments in federally aided agricultural departments in public schools, 1918–1930*

Year	Total enrollment	All-day schools	Evening schools	Day-unit schools	Part-time schools
1930 *	981, 649	113, 728	60, 462	9, 957	4, 164
1929	886, 849	106, 111	47, 283	9, 922	5, 126
1928	858, 456	96, 941	35, 192	8, 810	4, 456
1927	784, 986	89, 380	26, 227	8, 598	3, 622
1926	753, 416	82, 431	19, 280	8, 142	2, 716
1925	676, 687	70, 966	15, 835	4, 002	2, 330
1924	662, 594	65, 336	15, 227	3, 266	2, 143
1923	536, 526	62, 978	9, 319	1, 911	2, 090
1922	475, 626	52, 963	1, 338	----------	5, 942
1921	324, 247	40, 763	1, 189	----------	1, 445
1920	265, 058	31, 801	----------	----------	----------
1919	194, 895	19, 983	----------	----------	----------
1918	164, 189	15, 480	----------	----------	----------

* Figures for 1930 are provisional, subject to final audit of State accounts.

[1] Fourteenth Annual Report of the Federal Board for Vocational Education, 1930. Washington, Federal Board for Vocational Education, 1930, p. 82.

[2] *Ibid.*, p. 82.

The total cost of the federally aided program rose from $7,608,913.76 in 1927–28 to $8,749,072.31 in 1929–30. The percentage of the total fund which was contributed by the Federal Government dropped from 37.4 per cent to 36.3 per cent. Funds contributed by local communities increased considerably more than the funds from State sources.

Table 2 shows the increase in expenditures for agricultural education by the various units in the federally sponsored system from 1917–18 to 1929–30.[3]

TABLE 2.—*Expenditures of Federal, State, and local money for vocational agricultural education by years, 1918–1930*

Year	Total	Federal money	State and local money		
			Total	State	Local
1930 [1]	$8,749,072.31	$3,173,628.52	$5,575,448.79	$1,792,937.06	$3,782,511.73
1929	8,418,981.20	2,903,959.92	5,515,021.28	1,703,948.63	3,811,072.65
1928	7,608,913.76	2,844,464.24	4,764,449.52	1,539,661.36	3,224,788.16
1927	7,469,295.39	2,801,591.57	4,667,703.82	1,509,065.78	3,158,638.04
1926	7,164,460.46	2,656,886.13	4,507,574.33	1,571,426.97	2,936,147.36
1925	6,146,124.01	2,262,542.88	3,883,581.13	1,370,964.90	2,512,616.23
1924	5,253,912.86	1,897,907.50	3,356,105.36	1,203,486.62	2,152,618.74
1923	4,647,042.04	1,669,698.75	2,977,343.29	1,108,461.22	1,868,882.07
1922	4,058,440.36	1,435,475.22	2,622,965.14	1,039,487.89	1,583,477.25
1921	3,393,088.21	1,192,131.17	2,200,957.04	968,674.16	1,232,282.88
1920	2,437,286.06	889,886.29	1,547,399.77	678,824.43	868,575.34
1919	1,413,938.49	528,679.13	885,259.36	399,982.80	485,276.56
1918	739,[illegible].27	273,282.08	466,651.19	220,713.98	245,937.21

[1] Figures for 1930 are provisional, subject to final audit of State accounts.

The number of high schools offering all-day or day-unit courses increased from 4,067 in 1927–28 to 4,487 in 1929–30.[4] Considering that there were in 1920 in the United States 13,751 high schools in centers of fewer than 2,500 people, it can be roughly estimated that vocational agriculture has penetrated about a third of our rural high schools. Since many rural high schools are too small to support such a program, the portion of schools suitable for vocational agriculture in which it is already taught is considerably more than one-third. The extent of the program for adult farmers and for employed farm boys is much less satisfactory. Approximately 1 per cent of the adult farmers of the United States were enrolled in federally reimbursed evening classes in 1929–30. The percentage of employed farm boys 14 to 21 years of age attending reimbursed part-time classes was probably less than 1 per cent, though the data on this point are less dependable than the data regarding percentage of adult attendance.

New legislation.—Expansion of the federally aided program was aided by the enactment on February 5, 1929, of the George-Reed Act which provided funds for agricultural and home-making education

[3] *Ibid.*, p. 92.

[4] Comparison of Twelfth Annual Report of the Federal Board for Vocational Education, p. 24, with Fourteenth Annual Report, p. 79.

over a 5-year period beginning July 1, 1929. Under the act agricultural education receives $250,000 during the first year and $250,000 additional each year until the maximum of $1,250,000 is reached in 1933–34. The general provisions of the vocational education act of 1917 apply in the administration of the new legislation except that the funds are prorated to the States on the basis of farm population rather than rural population. Under the act also the Federal Board for Vocational Education was granted an additional $100,000 annually which has made possible the employment of specialists in research, in teacher-training, in part-time and evening schools, and in agricultural subject matter, who devote themselves to the agricultural education field.

Increased emphasis on education for employed farmers and farm boys.—The general tendency, which has been evident since 1917, to emphasize the high-school program in vocational agriculture more than the program for employed farmers and farm boys has continued. However, in 1929–30, in certain widely scattered States (Arizona, Arkansas, Georgia, Iowa, South Carolina, and Virginia) the number of farmers taught exceeded the number of prospective farmers enrolled.[5] This situation had never occurred in any State previous to 1928.

The growth of enrollment in evening classes for farmers has been much more rapid than that in any other form of vocational agriculture. Until 1921 evening classes were not reported to the Federal Board for Vocational Education. In 1921, 1,139 persons were enrolled. As late as 1926 the total enrollment was only 19,239. In 1929–30, as noted previously, 60,462 farmers were reached.

In a very limited number of States there has been some gain in the enrollment in part-time classes for employed farm boys; in other States the enrollment has fallen off. The States which have been most successful during the biennium in attracting boys to this type of school are Arkansas, Georgia, New York, Ohio, South Carolina, and Wisconsin.[6] In the South, summer part-time schools have been introduced and have proved attractive.[7] In Wisconsin part-time work has gained in enrollment by the provision in addition to the traditional part-time school, which is in session several hours per day during the winter months and which teaches a variety of subjects besides agriculture, of two other types of part-time arrangements. One of these provides for meetings on Saturdays only and attempts to supplement agricultural with general education. The other is really an agricultural evening school for boys.[8]

Formation of a national organization for high-school and part-time students.—Since the inception of agricultural instruction in the public

[5] Fourteenth Annual Report of the Federal Board for Vocational Education, 1930, p. 82.
[6] *Ibid.*, p. 82.
[7] W. H. Garrison. Part-time Summer Schools. Agricultural Education, 1: 5, October, 1929.
[8] L. M. Sasman. Our Part-time Program. Agricultural Education, 1: 6, October, 1929.

schools there have been local organizations of agricultural students. Beginning early in the current decade a number of States formed State organizations. In November, 1928, these State organizations were affiliated in a national organization, The Future Farmers of America. Three annual congresses have been held. The 1930 congress was attended by 1,700 farm boys. On June 30, 1930, 36 States were represented in the organization with a total membership of 50,604. The organization has been made an integral part of the vocational agriculture program with national headquarters at the offices of the Federal Board for Vocational Education and State offices with the various State boards for vocational education.

The principal justification of the new organization has been as a device for teaching cooperation to rural boys. It has been found valuable also in creating interest in vocational agriculture, in bringing the boys and their accomplishments before the public in a desirable way, in carrying on community-service projects, in stimulating supervised practice activities, and in providing recreational programs for farm boys. In several States, most of them in the South, summer camps for future farmers are held annually.

Restatement of objectives.—Beginning with the 1928 regional conference there was considerable discussion in the north-central region of the need for new objectives in vocational agriculture. A committee of that conference produced a tentative list of objectives in March, 1929.[9] Meanwhile the agricultural section of the American Vocational Association had established a committee on objectives. In September, 1929, this committee was assembled at Washington for a protracted joint meeting with representatives of the Federal Board for Vocational Education. The report of this committee was accepted by the agricultural section at its annual meeting in 1930.[10]

Both of these committee lists reflect greater interest among persons in vocational agriculture in teaching more economical production, rather than merely in increased production; in emphasizing marketing instruction; in teaching cooperation; in stressing business management of the farm; in raising rural standards of living.

Curriculum trends.—There has been a notable tendency during the biennium toward the inclusion in the high-school course of study of more materials dealing with farm management, with agricultural institutions and agricultural cooperation, and with the mechanical and engineering aspects of farming. Emphasis on the technical aspects of crop and livestock production has not been lessened but courses have been lengthened to include the new phases.

[9] W. H. Lancelot. Ultimate Objectives in Vocational Agriculture. Agricultural Education, 1: 3, July, 1929.

[10] Report of Committee on Training Objectives in Vocational Education in Agriculture, with Suggestions as to Ways and Means of Attaining These Objectives. Federal Board for Vocational Education, 1930. 80 pp. (mimeographed).

In 1929–30, 36 States reported that 26.2 per cent of the time devoted to vocational agriculture in that year was given to farm mechanics.[11] This subject has largely developed in the vocational agriculture curriculum during the present decade. Devoted largely at first to purely manipulative activities of a very simple sort, the farm mechanics course has lately tended toward much greater attention to the managerial and engineering phases, such as the selection of farm machinery and equipment, the planning of farm buildings and farm layouts, the installation of farm electrical equipment.[12]

It has recently been realized more fully than previously that a person who is to manage a farm involving 6 to 10 or more enterprises must have more training in their management than is involved in their separate study. General management courses have therefore come in, usually in the last year of high school, to supplement and integrate the enterprise studies made earlier in the curriculum. These involve studies of farm organization, farm budgeting and accounting, marketing, financing, the management of labor, law as it relates to the farm.

Some have recently held that greater gains are likely to come to the farm people through greater effectiveness in working together than through increased efficiency in individual production. The presence of an acute agricultural surplus problem throughout most of the decade resulting from increased individual efficiency has intensified the desire to put into the public schools more that will aid farmers in their cooperative enterprises. Interest along these lines has greatly increased within the past two years. As a result more students in vocational agriculture are studying the causes of failure and success among farmers' cooperatives; more students are becoming acquainted with State and national cooperative organizations; more students are learning through practice to participate in farmers' group activities.

Changes in methods.—Discussions about methods in public-school agriculture have recently largely centered about the "conference method" of instruction.[13] Interest in this type of procedure has doubtless been increased because it has been found suited to the instruction of adults in evening classes, the older forms of classroom instruction having proved quite inadequate for adult groups. Undoubtedly, too, there has been carry-over from the methods used with adults to the methods used by these same teachers in instructing high-school groups. However, the conference plan of teaching was developed first with high-school groups; it is a type of "problem teaching," long well known to educators. It is significant that the

[11] C. T. Chesney. A Study of Vocational Farm Mechanics Courses in the High Schools of the United States, p. 88. Unpublished Master's Thesis, Iowa State College, 1930.

[12] *Ibid.*, pp. 81–85.

[13] See Conference Procedure in Teaching Vocational Agriculture. Bulletin No. 147, Agricultural Series No. 38, Federal Board for Vocational Education, June, 1930. vii+28 pp.

opinion is rapidly crystallizing that the best method for teaching adults is also the best method for teaching adolescents.

There has been a general tendency to replace manipulative activities and memorization of fact materials with problem solving. The intellectual content of vocational agriculture courses is being enriched generally. Greater definiteness of aim is emphasized.

Improvements in supervised practice.—The earliest supervised practice programs under the Federal vocational education act consisted of individual home projects comprising one or two animals or an acre or less of crops. Gradually the scope of projects has been increased until now they are commonly large enough to involve the use of commercial methods and machinery and to parallel in practicality the farming operations of adults.

Early projects ran for one year or less. Now they are planned to begin at the opening of the high-school period and to grow and continue indefinitely. The "long-time" or "continuation" project, which is designed to give a boy a start in farming is now the accepted type of project.

Class projects of various sorts have been introduced to supplement individual projects. Some are entirely class owned and class managed. Others are owned by a private individual who shares their management with a class group. In still other cases cooperative features are introduced in connection with the individual projects, class members cooperating as far as it is practical in buying, selling, breeding, advertising, and insuring.

Finally it has come to be generally accepted that a teacher's responsibility for supervised practice is not satisfied when he has satisfactorily managed the individual and group projects of his students. "Supplementary farm practice," under the teacher's direction, is also called for and various States have set up plans for systematizing it. Full use of this device involves making the most educationally of all of the opportunities each boy has for practical work in farming.

The tendency has been accentuated in the past two years to emphasize more strongly increased scope of project, lengthening of the project's duration, the use of class as well as individual projects and of supplementary farm practice. Rapid changes are taking place in the nature and effectiveness of this part of the instructional program.

Two aspects of project work have come in for special attention during 1928–1930—project accounting and project planning. Conspicuously in the States of the southern and Pacific regions and in Ohio and West Virginia there has been exhaustive study of the accuracy, completeness, and general worth of the project records being kept. These studies have uniformly revealed deplorable situations.

The most active committee of the agricultural section of the American Vocational Association has been engaged during the biennium in leading a movement for the correction of the conditions disclosed. Project plans have been found to be quite as inadequate as project records and numerous promising innovations have recently been introduced, particularly in connection with the preparation of project budgets and the making of estimates of probable financial returns and expenses.

Research in agricultural education.—In March, 1928, the North Central Regional Conference formed a committee on research which has served to stimulate and coordinate research in the region. In the spring of 1930 the Southern Regional Conference constituted a similar committee. In December, 1930, the agricultural section of the American Vocational Association reorganized its committee on research to function after the pattern of the regional committees previously set up. During 1931 it is expected that research committees will be developed in the two remaining regions and that rather extended sessions of each regional committee and of the national committee will be held.

Research received additional impetus during the biennium through the provision under the George-Reed Act of 1929 for a specialist in research in agricultural education to serve in connection with the Federal Board for Vocational Education. An important contribution of this specialist in his first year of work has been the preparation of a list of research publications in agricultural education from 1912 to 1930.[14] This list will be kept up-to-date through future publications.

There is apparently a growing realization of the neglect of research on agricultural education problems which has been characteristic until recently and a growing tendency to turn to research for answers to the questions which admit of a research approach.[15]

Selection of "master teachers."—A practice has recently grown up in the States of the South of selecting a "master teacher" from among the teachers of vocational agriculture. Beginning in 1928 this was made a regional affair and each year since a regional "master teacher" has been chosen. The procedures used in selecting these men are well described in a 1930 publication of the Federal Board for Vocational Education.[16]

National public-speaking contest.—To call attention to the need for preparing students in vocational agriculture for leadership activities a national speaking contest was first conducted in 1930. State

[14] Studies in Vocational Education in Agriculture. Miscellaneous publication No. 1060 (mimeographed), Federal Board for Vocational Education, February, 1930. iii+25 pp.

[15] See editorial, Research in Agricultural Education. Agricultural Education, 2:13, February, 1930.

[16] Master Teachers of Vocational Agriculture. Monograph No. 8, Federal Board for Vocational Education, March, 1930. iv + 16 pp.

and regional contests preceded the national event which was held at Kansas City, Mo., on November 17, 1930. Arrangements have been made for continuing these events in 1931.

STATE AND LOCALLY SUPPORTED CLASSES

High-school classes.—In a limited number of States high-school agriculture classes for which no Federal funds are received are common. The number of schools having such classes was reported for 10 States in connection with the land-grant college survey of 1928. Very few of the remaining States have such classes and in none of them is the number large. The relative occurrence of reimbursed and nonreimbursed classes in the 10 States where they are most common is shown in Table 3.[17]

TABLE 3.—*Agricultural positions in federally aided and other public schools in certain States, 1928*

State	In federally aided schools	Other agricultural positions	State	In federally aided schools	Other agricultural positions
Indiana	134	148	Mississippi	125	20
Iowa	109	630	Utah	28	36
Kansas	99	512	Vermont	6	21
Maryland	37	1	West Virginia	51	55
Massachusetts	67	5			
Minnesota	49	19	Total	703	1,457

Little information is available regarding the progress of classes of this type in recent years. A study showing the status of nonreimbursed classes in one State was made in Iowa in 1929–30. It showed the prevailing practice in rural consolidated schools having such classes to be to offer one year of high-school agriculture; other types of schools usually offered but a semester. Almost half of these classes were taught by the superintendents of schools. Fewer than half of the teachers had received their special training in agriculture at an agricultural college. The median teacher had 18.6 semester hours of credit in collegiate agriculture. While the study does not induce great enthusiasm for the work carried on under this plan, it appears from it that this phase of agricultural teaching is improving, that most of the persons in charge of it are trying to strengthen it, and that there is a definite place for it at this stage and during the immediately future stages of evolution in agricultural education.[18]

Further light is thrown upon the Iowa locally supported programs of agricultural education by a recent study of the characteristics of

[17] Data from Survey of Land-grant Colleges and Universities, II, 275, except that correction is made for Iowa to show schools offering courses in both semesters. Survey data show only schools offering agriculture in the first semester, 1928.

[18] C. M. Jerdeman. The Status of General Agriculture in Iowa Public Schools. Unpublished Master's thesis, Iowa State College, 1930. 67 pp.

a typical group of the pupils in these classes. Perhaps the most significant revelations of this study were that only 111 of 413 pupils were taking agriculture, according to their own statements, as a means of helping themselves to prepare for farming; that ony 27 per cent of these pupils had chosen farming as a vocation; and that 32 different occupations were represented among the vocational choices they expressed.[19]

To some extent high-school agricultural classes still exist for persons training to teach in rural elementary schools. These are reducing in number as normal training departments are being eliminated from the high schools. Their function has been changed also in that they now aim principally to acquaint prospective rural teachers with the major industry of the communities in which they will work as a background for effective teaching, rather than to equip them for teaching agricultural subject matter.

Elementary classes.—In the biennial survey report for 1922-1924 much concern was expressed regarding the practice believed then to be prevalent of attempting to give vocational training for farming in the rural elementary schools.[20] Probably this danger was considerably overestimated. At any rate, during the past two years very little has been heard regarding the desirability of early vocational specialization for farm boys or of keeping boys on the farm through a process of blindfolding them to other occupational opportunities. The general tendency now appears to be to criticize the offering of vocational agriculture even in the later years of the junior high school. It is possible that the development of a strong program of adult education in agriculture in connection with the public schools may have the effect in the future of further postponing specifically agricultural training. There appears to be growing support for a program of vocational guidance in the elementary and junior high schools of country regions which will present fairly to rural children all occupations, rural and urban, leaving to them at a more mature age the choice of the calling for which they will take vocational training.

AGRICULTURAL EXTENSION WORK

THE GENERAL EXTENSION PROGRAM

Extent.—In 1930 the agricultural extension service of the United States comprised a national extension director, with about 35 Federal organization and subject-matter extension specialists; about 60 State extension directors and assistant directors; about 410 State supervisors of county agents; about 1,100 full-time and part-time State extension specialists; about 4,000 county extension agents and

[19] H. E. Irons. Characteristics of Pupils in General-Agriculture Courses in Certain Iowa High Schools. Unpublished Master's thesis, Iowa State College, 1930. 81 pp.

[20] George A. Works. Agricultural Education. Bulletin No. 33, 1925, U. S. Bureau of Education, pp. 1-6.

assistants. There was an annual expenditure for the work of about $23,000,000. About three-fourths of the rural counties had county agents; about one-third had home demonstration agents; and only about one-eighth had club agents.[21]

Of the county extension agents employed on June 30, 1929, there were 2,624 agricultural agents, 2,452 of them white and 172 negroes. There were 252 white and 2 negro club agents.[22]

The scope of this program may well be contrasted with that reported by True for the year, 1920.[23] In that year the following agricultural extension workers were reported:

County agent work (men):	
Directors and State leaders	60
Assistant State leaders	147
County agents and assistants	2,024
Local agents (colored)	151
Total	2,382
Home demonstration work:	
State leaders	44
Assistant State leaders and district agents	116
County agents	810
Local agents (colored)	51
City agents	11
Total	1,032
Club work:	
State leaders	60
Assistant leaders	73
County leaders	251
Total	384
Grand total	3,798

During 1919–20 a total of $14,658,080 was spent on the cooperative agricultural extension program.[24]

In 1929, 929,744 adult demonstrations and 994,262 club demonstrations were carried in the United States.[25] More than 5,170,000 improved farm and home practices were introduced which were reported to be due to extension influence.[26]

[21] C. B. Smith and M. C. Wilson. The Agricultural Extension System of the United States. New York, John Wiley & Sons, 1930, pp. 17–18.

[22] M. C. Wilson. Statistical Results of Cooperative Extension Work, 1929. Extension Service Circular 124, May, 1930, p. 2. (Mimeographed.)

[23] A. C. True. A History of Agricultural Extension Work in the United States, 1785–1923. Washington, Government Printing Office, 1928, p. 202.

[24] *Ibid.*, p. 198.

[25] Wilson, *op. cit.*, p. 3.

[26] *Ibid.*, p 5.

The teaching strength of the extension forces has been greatly increased during the biennium by more general use of volunteer leadership to supplement the paid leaders. In Iowa alone in 1929 extension workers made use of 19,544 local leaders.[27] It is estimated that there are at the present time about 250,000 local leaders in the United States, 185,000 of whom aid in adult work while 65,000 assist with club work. These leaders give a minimum total of 2,000,000 days of service per year, the equivalent of the time of 7,000 people employed 300 days per year.[28]

New extension legislation.—Under the Federal Capper-Ketcham Act of May 22, 1928, $1,480,000 was made available annually for the further expansion of the agricultural extension program; $20,000 of this fund goes to each State and the Territory of Hawaii. The remaining $500,000 is distributed to the States on the basis of their rural populations, but must be matched by State funds to be received. Eighty per cent of this money must be spent for the salaries of county extension agents, men and women.

Under of acts May 16, 1928, and February 23, 1929, respectively, agricultural-extension service was provided for Hawaii and Alaska.

New projects.—The economic aspects of agriculture, including attempts for its improvement through cooperative activities, have received much additional attention during the years 1928–1930.

Regional, State, and district "outlook conferences" have been introduced for the discussion of the statistical data gathered by the United States Department of Agriculture relative to prospective supply and demand and to find uses for these data in local situations.

County programs for economic improvement have been more commonly worked out with extension assistance.[29] These projects call for the gathering of data regarding county needs, the interpretation of these data, and the framing of feasible programs based on them. County programs are usually planned and carried out through committees of representative farm people.

Cooperative marketing has received much assistance from extension forces during the past two years. In 1929, 572 county agents reported to the United States Department of Agriculture that 875 cooperative marketing organizations had been established during the year with their assistance. The membership in new cooperative marketing associations which 526 county agents had helped to found in 1929 was 112,032. The total value of the sales during 1929 of all the cooper-

[27] R. K. Bliss. Extension Service in Agriculture and Home Economics. Iowa State College Extension Service Bulletin, 1930, p. 5.

[28] Based on statement by Smith and Wilson, *op. cit.*, p. 119.

[29] For good examples see An Economic Survey of Goshen County, Wyo., Circular No. 26, Wyoming Extension Service, May, 1930, and the reports of farm and home economic conferences for Clark, Coddington, and Lincoln Counties, S. Dak., issued in 1930 by the Agricultural Extension Service of South Dakota State College.

ative marketing associations organized up to the end of that year by county agents was given in the agents' reports as $222,382,930.[30]

Farm Bureau and extension service relationships.—In 1920, Dr. C. B. Smith, now chief of the agricultural extension service of the United States, described the Farm Bureau as "practically a public institution, developed at the direct suggestion of agents of Government for the purpose of creating a channel through which the practical results of the research work of the Government might with certainty reach the people for whom it was intended." [31]

This statement was made but a year after the formation of the American Farm Bureau Federation and it was largely based on previous experience with State, county, and township units. With the growth of the national federation into a powerful farmers' organization, which is relatively independent of extension service control and which engages in furthering "class legislation" and promoting specific marketing projects, acting often in opposition to other farmer groups, the difficulties involved in the alliance of the extension service with such an agency have greatly increased and the desirability of the arrangement has more often been questioned.

Extension service and the public schools.—School people friendly to extension work have contended that its best possible alliance in a community would be with the local public schools and that its entire program could be satisfactorily carried on through a public rather than a quasi-public agency. Extension workers are generally alert and eager to use the schools so far as they are available to them but they have often been repulsed by school authorities unsympathetic to the introduction of extension activities. There seems recently, however, to have been an increase in friendliness between the representatives of the public schools and representatives of the extension forces which promises much for further development of cooperation advantageous to each.

The growth in good relationships between extension workers and public-school employees who come under the Smith-Hughes Act has likewise been encouraging. In several States memoranda of understanding have been worked out between these two groups; a memorandum bearing upon national relationships has likewise been developed. Most promising of all is the tendency on the part of both groups to find ways in which they may cooperate rather than to fix lines across which neither dare step.

A recent statement on Smith-Hughes and Smith-Lever relationships, contained in the section on extension work of the report of the

[30] Wilson, *op. cit.*, p. 24.
[31] True, *op. cit.*, pp. 166-167.

Land-Grant College Survey, outlines a comprehensive policy for the cooperation of these two groups.[22]

Both phases of work are meant to function in the interest of rural improvement. Both groups work with rural people—men, women, boys, and girls. Both are supported from Federal, State, and local funds. There can, therefore, be no justification for, or toleration of, unreasonable duplication of effort. All agreements must be based upon the needs of, and service to, local people rather than upon prerogatives of institutions or agencies. The staffs of the two groups combined are even now wholly inadequate to the task ahead. For each there is a large field that may be satisfactorily defined. It is the job of administrators to define these fields. Smith-Hughes activities are built around the public school. There is no disagreement as to function in the task of dealing with regularly organized classes made up of pupils in the school. Neither is there any question raised by extension workers in regard to projects for either youths or adults when they are an integral part of real organized class work. Difficulties arise when infrequent and general meetings with adults are held under the name of regular class work; likewise when home projects and demonstrations are carried out on the farms of adults who may attend infrequent meetings. This is not systematic class work. It is extension work and must be recognized as coming under the jurisdiction of extension agents. If Smith-Hughes teachers participate in such work it should be with the consent and under the direction of extension agents.

Similar statements can and should be made in regard to general community activities. No extension worker should deny the right of a Smith-Hughes teacher to become a part of the community in which he lives or to promote its welfare in every legitimate way. But all such activities that are concerned with the interests of all the farms and farm homes in the community which get beyond community boundaries and reach out over the county as a whole must be coordinated with the county program of work and under the direction of the extension agent or agents.

When boys and girls are regularly enrolled in Smith-Hughes classes, and hence are carrying on home projects and are likewise participating in 4-H club activities, great care should be exercised to make sure that the pupil's best welfare is given first consideration. It is quite possible that he can not properly carry the two lines of work. Certainly he should not carry on one project and get credit through both agencies. In case a choice is necessary the advantage of carrying a Smith-Hughes course under the careful guidance of a teacher resident in the community should not be overlooked.

Measuring the effectiveness of extension education.—Interest in the measurement of the results of extension education has recently been high. The most common measure has been the number of new practices introduced. In addition to determining the gross results in terms of changed practices, studies have been made of the methods of procedure and the characteristics of extension workers which make for the adoption of the largest number of new practices. These studies are reported in a publication of the United States Department of Agriculture, Extension Methods and Their Relative Effectiveness, issued in September, 1929.[23]

[22] Survey of Land-Grant Colleges and Universities, Vol. II, pp. 503-504. Washington, Government Printing Office, 1930.

[23] Technical Bulletin No. 138. 45 pp.

Radio education.—A number of college-extension services have the supervision of radio stations which are used in connection with their state-wide programs. These educational devices, unknown a decade ago, have already come to be a very important part of the extension machinery of certain States.

BOYS' AND GIRLS' CLUB WORK

Extent.—Enrollments in boys' and girls' club work during recent years is reported in Table 4.[34] A considerable number of the girls were enrolled in home economics rather than in agricultural projects. The enrollments in strictly agricultural projects are given in Table 5.[35]

TABLE 4.—*Junior club enrollments, 1923–1929, as reported by extension agents in 48 States*

Year	Number boys enrolled	Number girls enrolled	Total enrollment
1923	187,277	271,797	459,074
1924	209,810	300,545	510,355
1925	224,633	340,413	565,046
1926	234,078	352,078	586,156
1927	249,553	370,159	619,712
1928	270,534	393,406	663,940
1929	303,509	452,587	756,096

TABLE 5.—*Enrollments in agricultural club projects, 1929, as reported by all county extension agents in the United States*

Project	Number of boys' and girls' clubs	Number of boys enrolled	Number of girls enrolled	Number of boys completing	Number of girls completing	Number of units involved in club work	Quantity produced
						Acres	*Bushels*
Corn	1,821	40,150	1,008	25,627	5,933	40,991	1,640,563
Wheat	35	761	6	445	2	3,259	46,645
Oats	19	670	26	398	23	1,052	25,584
Rye	9	205	5	77	----	125	2,115
Barley	5	296	1	275	1	311	5,114
Other cereals	30	2,914	177	1,677	92	3,967	96,459
Alfalfa	43	525	32	432	31	617	[a]854
Soybeans	114	1,746	115	1,318	92	1,509	6,583 [a]2,177
Sweetclover	2	82	2	35	1	59	[a]36
Crimson clover	2	29	5	27	5	31	[a]1
Clover (red, alsike, or white)	43	137	4	58	3	142	361
Cowpeas	130	1,309	14	868	11	1,067	8,142 [a]1,111
Velvetbeans	21	218	8	164	4	194	5,200 [a]141
Field beans	44	541	46	446	37	358	7,198
Peanuts	237	5,062	268	3,036	118	3,007	96,494
Lespedeza	0	41	1	31	1	36	[a]51
Pastures	13	264	5	101	2	221	----
Other legumes	104	1,229	50	726	27	808	7,430 [a]763
Irish potatoes	961	13,620	1,426	9,759	814	4,729	463,972
Sweetpotatoes	230	4,420	299	2,622	170	1,668	286,725
Cotton	584	34,489	1,794	22,518	1,013	28,604	[b]27,639,767
Tobacco	118	3,502	312	2,704	205	2,220	[b]1,596,563

[a] Tons. [b] Pounds.

[34] Data provided privately by M. C. Wilson, in charge, extension studies and teaching, United States Department of Agriculture.

[35] Wilson, *op. cit.*, pp. 30–32. It should be borne in mind that many boys have engaged in more than one club project. The total number of different participating individuals is not available.

TABLE 5.—*Enrollments in agricultural club projects, 1929, as reported by all county extension agents in the United States*—Continued

Project	Number of boys' and girls' clubs	Number of boys enrolled	Number of girls enrolled	Number of boys completing	Number of girls completing	Number of units involved in club work	Quantity produced
						Acres	*Bushels*
Other special crops	48	835	63	544	31	605	
Tree fruits	40	1,104	54	685	43	723	11,429
Bush and small fruits	59	1,003	311	609	173	107	[2] 101,077
Grapes	14	249	41	131	38	70	[3] 45,295
Market gardening, truck and canning crops	178	3,185	751	1,937	498	1,653	98,031
Home gardens	3,810	22,088	102,848	14,169	59,821	2,595	73,848
Beautification of home grounds	1,883	3,692	78,002	2,246	44,109		
Forestry	330	4,796	813	3,325	527	[4] 116,711	
Dairy cattle	3,195	37,908	13,084	28,552	8,666	[4] 41,977	
Beef cattle	791	10,705	1,538	8,576	1,243	[4] 12,176	
Swine	2,231	48,381	3,348	31,215	2,165	[4] 72,869	
Sheep	650	8,273	1,621	6,114	1,247	[4] 27,836	
Poultry	4,297	41,045	58,819	24,797	35,223	[5] 1,882,769	
Other livestock	289	4,255	974	2,980	687	[4] 17,108	
Agricultural economics	393	9,423	2,388	5,678	1,701		
Beekeeping	88	977	197	657	83	[6] 4,461	
Miscellaneous agriculture	196	6,229	4,122	3,017	2,222	[7] 9,382	
Total	28,077	316,287	275,555	208,549	161,721		

[2] Pounds. [3] Quarts. [4] Animals. [5] Birds. [6] Swarms. [7] Units.

As previously indicated,[36] there were in 1929 in the United States 254 club agents serving about one-eighth of the agricultural counties. In addition, a large amount of club work was supervised by the 2,624 county agricultural agents and a host of unpaid local leaders.

It was estimated in 1926 that there were then 11,000,000 rural boys and girls eligible to club membership.[37] The total enrollment in 1929 having been 756,096,[38] it is apparent that only about 7 per cent of those who might receive club training have yet been touched in any one year.

Objects of club work.—One of the best statements regarding the purposes of junior club work is that of Dr. C. B. Smith, present chief of the national extension program.[39]

> 4-H club boys and girls are doers. They are taught high ideals and standards. They meet together, work together, cooperate, achieve. They play the game fairly. They demonstrate, earn money, acquire property. They learn and teach the better way on the farm, in the home, and in the community. They build up their bodies and their health through right living. They train their hands to be useful, their minds to think clearly, and their hearts to be kind.

Relationship to the public-school program.—In developing the junior club program some States have chosen to work largely outside the public schools while other States have linked closely their club and

[36] Page 15.

[37] C. B. Smith. Boys' and Girls' 4-H Club Work. Miscellaneous Circular No. 77, U. S. Department of Agriculture, October, 1926, p. 11.

[38] See Table 4.

[39] Smith, op. cit., p. 11.

school programs. Twenty-four extension directors reporting in connection with the land-grant college survey of 1928 indicated that their club activities were entirely carried on outside the schools of their States; 24 others indicated that they worked with the schools.

A recent statement from the Federal office of club work lays down a recommended policy with respect to cooperation with the schools, as follows:[40]

> Cooperation with the schools in the conduct of club work is a fine thing where the school authorities welcome it. From the standpoint of permanent organization that reaches into the life of the people and develops their support and leadership, the organization of the work on a neighborhood or community basis, outside the school, but correlated with other educational agencies, seems to be most effective.

National camps.—During the biennium two national camps of importance have been developed by club workers: The National 4-H Club Encampment at Washington, D. C., and the Springfield (Mass.) Training School. The former camp is attended by outstanding active club members. The latter camp is for the training of club leaders and enrolls persons 18 to 24 years of age for two weeks with all expenses, including travel, paid. Only outstanding local club leaders can qualify for the Springfield camp.

LAND-GRANT COLLEGE SURVEY RECOMMENDATIONS REGARDING AGRICULTURAL EXTENSION

The most thorough national study of extension work which was made during the biennium was that of the land-grant college survey staff.[41] The recommendations contained in its report covering both general extension activities with adults and 4-H club work are reproduced here.

(1) Smith-Lever extension owes its present position to five contributing factors, namely, an historical ideal of direct service, substantial Federal support, private economic advantage, political consciousness, and cooperation supplemented by effective publicity.

(2) The statements of objectives and programs of work do not adequately recognize that Smith-Lever extension includes not only vocational training but also important social and humanistic purposes.

(3) The fundamental objective of Smith-Lever extension education, namely, development of rural people themselves, was stated as of first importance by but four institutions. It was pointed out that this objective is accomplished by fostering attitudes of mind and capacities which will enable rural people better to meet the individual and civic problems with which they are confronted.

(4) The lack of close articulation of extension with resident instruction and research work is a decided weakness in the organization of many institutions.

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[40] Extension Service Review, June, 1930.

[41] Survey of Land Grant Colleges and Universities, Vol. II, 435–556.

(5) Unless extension specialists bring back to their institutions pressing problems requiring research attention, they are only partially filling the job. This function has not been sufficiently emphasized.

(6) The lack of systematized organization of time, projects, personnel, and finances in some counties is hindering the attainment of maximum results.

(7) The most effective extension organizations are those in which the central supervisory force serves effectively and in which local people are securely welded into responsible active groups.

(8) The functions of the club agents in organization and supervision should be more fully supplemented by, and coordinated with, competent technical knowledge ordinarily available through trained agricultural and home demonstration agents.

(9) Smith-Lever extension is financed cooperatively, the Federal Government contributing 35 per cent, State funds 37.5 per cent, county funds 22.1 per cent, and private agencies 5.4 per cent (1927 budget).

(10) In spite of the fact that the adoption of the local-leader method has made it possible for home economics extension to reach more people and to secure adoption of more practices per worker and per dollar of cost than any other type of extension service, its ultimate success will depend upon the solution of the following problems: (*a*) Teaching subject matter and methods of presentation to local leaders in a relatively short time; (*b*) a method of adequate supervision of the teaching done by local leaders; (*c*) the present dependence upon acceptance and use of material presented by local people rather than by trained State specialists; and (*d*) the tendency for the county agent to become merely an instigator of events rather than a teacher of subject matter.

(11) If 4-H club work was charged its complete cost of operation it would include from one-fourth to two-fifths of the charge now being placed against county-agent work.

(12) The responsibility for obtaining State legislative appropriations for extension activities is now assumed by the directors in several States. Such requests should be included in the larger institutional budgets and promoted by institutional administrators.

(13) Present methods of financing county workers is a serious weakness in extension organization in the great majority of States. The most important needed change is the payment of salaries of all county workers from State and Federal funds and expenses from county funds.

(14) Sixty per cent of the agricultural counties are without home-demonstration agents. Increasing demands for this service deserve immediate attention.

(15) Normal development of the extension system has been arrested because of lack of money. To complete the organization on the basis of the plan now contemplated will require an accumulating increase of $1,000,000 a year for 10 years.

(16) Administrative measures being developed to raise the level of training and caliber of extension workers are not adequate and satisfactory, as evidenced by the facts that (*a*) 30 per cent of State leaders, 8 per cent of agricultural specialists, 15 per cent of home economics specialists, 17 per cent of agricultural agents, and 44 per cent of home agents are not college graduates; (*b*) one-half of the institutions that grant leave of absence for self-improvement of staff members do not grant this privilege to county extension workers; (*c*) one-third of the institutions fail to require even a bachelor's degree as a qualification for specialists and only five require that these extension teachers shall have had teaching experience; and (*d*) one-half do not require practical farm experience as a qualification for county-agent work.

(17) The conclusions concerning salaries are: (*a*) When training and experience are considered county extension agents as a whole are well paid compared to college teachers; and (*b*) the college teacher has a better chance of ultimately securing a higher salary than the agent, if both remain in their respective fields of work.

(18) One feature of great strength in the extension system is its close relationship to commercial organizations. Nevertheless, these relationships have resulted in failure to maintain in some instances the strictly educational functions of the extension service. The solution lies in strict adherence by responsible administrative officers to definite educational policies that have been laid down.

(19) If cooperation with the Farm Bureau is to continue successfully, all commercial activities developed by it must be carried on entirely separate from the county extension office or extension must seek other channels through which to develop its educational program.

(20) Commercial agencies have very properly cooperated with and strongly supported Smith-Lever extension activities. Reports of attempts at exploitation of these relations in the interest of business enterprises make very clear the need of promptly dealing with these situations. There can be no compromising with educational principles and responsibilities.

(21) All agreements between Smith-Lever and Smith-Hughes forces must be based upon the needs of, and service to, local people rather than upon prerogatives of institutions and agencies.

(22) The "outlook" economic material needs to be made more accurate and more adaptable to wider utilization by State specialists.

(23) Contrary to common belief and public expression, much extension service is being rendered in the field of agricultural marketing. Twenty-two institutions report extension marketing projects under way with 73 per cent of the time of the specialists expended on cooperative marketing. It is important that Smith-Lever forces adhere closely to their educational functions in this as in other fields of work and do not become involved in commercial activities.

(24) Programs of work consist often of a large number of projects hastily chosen and "thrown together" into a paper outline of activities. Projects should be fewer in number and the elements of each thoroughly analyzed.

(25) There is a very pressing need of more closely correlating the agricultural and home-economics projects.

(26) The demonstration method has reached its highest development in Smith-Lever extension but needs study and analysis prerequisite to further development in more projects.

(27) It is probably too soon to draw definite conclusions as to the value of the radio in extension work. Forty per cent of the institutions using the radio consider it valuable for dissemination of objective information, but at present seriously question it as a teaching medium.

(28) There is a decided tendency to base judgments as to efficiency and progress upon quantitative measures and to ignore the importance of quality in achievements.

(29) The per cent of completions of 4-H club projects is entirely too low. Whereas the average does not exceed 60 it should be at least 85 or 90.

(30) Unless 4-H club work supplements other educational activities and whets the desire for continuing education it is not meeting its opportunity. Sufficient emphasis has not been placed upon this objective by 4-H club administrators.

(31) If Smith-Lever education fails to reach its maximum effectiveness and to hold its true place in the general educational program it will be largely because of weak administration based upon expediency of action.

AGRICULTURE IN THE COLLEGES

ENROLLMENT INCREASES

The 1930 enrollments in forestry and veterinary science are the largest in the history of these two courses. Enrollments in general agriculture were at their height in 1916–17, fell in 1918–19 to 9,564 students, rose in 1920–21 to 14,493 students, dropped off again until 1926–27 to 11,179 students, and increased in 1930 to 12,524. Total enrollments in these three phases of agriculture have increased since 1927–28 from 13,149 to 14,677 in 1930. These data are given in Table 6.[42]

TABLE 6.—*College enrollments in agriculture, 1916–17 to 1929–30*

Year	General agriculture	Forestry	Veterinary science	Total agriculture
1916–17	[illegible]	347	773	16, 409
1917–18	12, 760	152	533	13, 445
1918–19	9, 564	216	565	10, 345
1919–20	14, 275	452	643	14, 370
1920–21	14, 493	391	550	15, 434
1921–22	14, 398	629	450	15, 477
1922–23	13, 502	588	525	14, 615
1923–24	12, 381	834	470	13, 685
1924–25	11, 715	1, 003	488	13, 206
1925–26	11, 412	1, 074	471	12, 957
1926–27	11, 179	1, 011	520	12, 710
1927–28	11, 461	1, 076	612	13, 149
1928–29	12, 604	1, 195	760	13, 559
1929–30	12, 524	1, 269	884	[1] 14, 677

[1] Subject to revision.

LAND-GRANT SURVEY RECOMMENDATIONS

The availability in the report of the land-grant college survey of detailed information regarding the recent status of agriculture in the colleges makes unnecessary a full treatment in this report.[43] The general survey recommendations touching collegiate agriculture follow.

(1) Preparing students for general farming is no longer a primary function of the resident undergraduate work of colleges of agriculture in the land-grant institutions. Social, economic, and educational advances require that this fact be recognized frankly by the institutions and by their constituencies.

(2) The objectives of higher education in agriculture are increasingly and properly those of preparing: First, research workers in the scientific and social fields related to agricultural production and distribution and to rural life; second, extension workers for service in the dissemination of knowledge concerning the applications of scientific and economic truth to the problems of rural living; third, workers in all types of business and commercial activities related to agricultural production, distribution, and service; fourth, teachers of vocational agriculture and science in the public high schools; fifth, public servants in the

[42] Furnished by Dr. Walter J. Greenleaf, U. S. Office of Education.
[43] Survey of Land Grant Colleges and Universities, Vol. I, 715-788.

investigating and regulatory departments of the State and National Governments; and sixth, overseers and managers of specialized and large-scale farm enterprises.

(3) The basic problem of organization of agricultural work in the land-grant institutions is one of devising methods for integrating and coordinating resident teaching, experiment-station research, and extension activities. Tendencies in a number of institutions to develop research and extension in relative isolation from resident teaching require administrative attention.

(4) Minute specialization of departmental organization, with excessive departmental autonomy, tends, in certain institutions, to duplication of work, expensive instruction, and offerings inappropriate to undergraduate work, especially during the first two years of the college course.

(5) In view of the necessity for specialization in serving the diversified needs of modern agricultural research, extension, teaching, and business, and in view of the widespread development of public junior colleges, it is advisable that the land-grant institutions give consideration to reorganization of the agricultural division into junior and senior divisions, with specialization delayed until the end of the second year. Such reorganization is in harmony with current tendencies in higher education and not incompatible with any of the objectives of college education in agriculture except the vocational one of preparation for general farming.

(6) The standard for training for agricultural staff members is being raised in harmony with the development of instruction that emphasizes scientific and economic objectives. Continued emphasis upon attainment of advanced degrees by the staff and upon study of subjects in education applicable to the problems of college teaching is desirable.

(7) The salaries of agricultural staff members serving for 11 months each year are not commensurate with those who serve 9 months. An adjustment of the salary scales upon the 9 and the 11 months' basis is urgently recommended.

(8) The number of students who enroll in agriculture varies with the condition of agricultural industry. This is true, although emphasis upon the training of research and extension workers, high-school teachers of agriculture and science, for State and Federal employment, and for business more or less closely related to agriculture tend to make this variation less acute than when the objective is primarily a back-to-the-farm one.

(9) Agricultural courses and curricula, and, to a considerable extent, departmental development, reflect a decided tendency to increased economic and social emphasis upon the part of the agricultural colleges. This trend has not resulted in weakening of interest in the physical sciences.

(10) Experimental scientific investigations of certain educational problems extending over a period of years and conducted cooperatively and simultaneously by a number of agricultural divisions are recommended. Studies of this kind should be carried on in close cooperation with institutional schools of education or under the direction of educational technicians employed for the purpose. The following fields are suggested: (*a*) The different effects upon subsequent student work of teaching certain sciences in the college of agriculture and in the other basic science divisions; (*b*) method of coordinating the content of specialized courses in agriculture offered during the first two years of college; (*c*) the effects of farm practice requirements upon educational progress and practical success; (*d*) methods of providing practice work for prospective extension workers; (*e*) the validity of prerequisites now prescribed with reference to success in subsequent work; for example, general science prerequisites for applied work in agriculture; (*f*) the effects of different combinations and sequences of subjects upon students of equal ability; (*g*) methods of determining the degree and effects of the previous

training of entering students (Smith-Hughes students especially) with reference to ability to carry on specific college subjects in agriculture and means of adapting beginning instruction in college to such individual differences of preparation (not mental ability) as are found; (*h*) the effects of different laboratory methods and means of determining the most effective length of the laboratory period for each phase of a single course; (*i*) effects of class size upon student learning in various subjects and during the different years of college work; (*j*) methods of instruction designed to increase individual student responsibility; and (*k*) requirements that may serve as substitutes for class attendance and their effect upon progress and learning of students in different subjects and at different levels.

TRAINING OF TEACHERS OF AGRICULTURE

The recommendations of the survey staff relative to the development of the departments of agricultural education in the land-grant institutions were reported separately from those affecting the agricultural colleges as a whole.

1. Agricultural education is a major concern of the land-grant institutions of most of the States. One of the best means now available for performing this function is through the training of teachers of agriculture to serve in the public schools.

2. The training of teachers of agriculture for the public schools is already one of the most important functions of our agricultural colleges. It is a rapidly expanding program. As yet it has scarcely reached a quarter of its probable eventual scope.

3. Emphasis on the preparation of agricultural teachers has mainly been on the preparation of teachers for the Smith-Hughes system. This program should receive continued and increasing attention, but there are other important phases which should be developed.

4. The ultimate goal in agricultural education is to place a satisfactory form of such training within the reach of every farmer and of every person who is preparing for farming. To do this within a reasonable length of time calls for the expenditure of a considerable amount of effort and money on the part of each State supplementary to the assistance provided by the Federal Government. No State should be content with the program which results from merely matching the Federal funds available for agricultural education.

5. Unless there is a change in the financial policy with respect to training teachers of agriculture, control of such teacher training is likely to pass largely out of the hands of the land-grant institutions even though the program continues to be conducted through them. In 1928–29 these institutions contributed by 9.39 per cent of the salaries of the persons employed in the federally sponsored program of agricultural teacher training, which comprise almost all of the agricultural teacher training under way. In addition, buildings and equipment were provided by the land-grant institutions. However, the major share of all costs was borne by the Federal Government or by the State boards for vocational education. As yet there is little complaint of excessive domination by authorities outside the colleges but there is no question that the program of agricultural teacher training is being greatly influenced by the source of the funds which support it, and to a considerable extent adversely, mainly because of the tendency produced to neglect important phases which do not interest those who finance the teacher-training program.

6. The articulation of agricultural education with other phases of teacher training in the land-grant college needs to be materially improved through some

plan of centralization of the educational forces within each institution. At the same time care must be taken that relationships with the agricultural college are kept close.

7. The land-grant colleges need a much closer relationship with the public-school systems of their States. This is particularly true of the separate State colleges. Members of the staff in agricultural education should develop affiliations with general education. Some means should be provided for keeping school administrators in touch with the agricultural education program.

8. Whenever it is possible to do so the land-grant institutions should carry out their programs of agricultural education through the local public schools, rather than through other local agencies. The work of the extension departments should be unified with that of the departments of agricultural education in conducting such agricultural programs in the public schools.

9. The land-grant institution is the logical one in each State in which to train all teachers of agriculture. When this responsibility has been taken over by other types of institutions it is commonly because of the negligence of land-grant college officials. This situation should be avoided by the provision of strong programs in the land-grant institutions for the training of all kinds of teachers of agriculture adapted to all sorts of schools to be found in a State. There appears to be no sound reason why most of the teaching of agriculture should be done by persons who have not been trained in an agricultural college as is now the case in certain States.

10. In order to make it possible to place teachers of agriculture in all the sorts of situations which exist it will be necessary that they be trained for teaching subjects other than agriculture. There is no reason why this can not be done satisfactorily in most land-grant institutions.

11. Departments of agricultural education should have closer relationships with the curricula for prospective agricultural teachers. Where the numbers warrant it, courses should be set up cooperatively which provide not only for the professional subjects required, but for the subject matter necessary for such teachers. There should be special curricula, preferably four years in length, for teachers of agriculture in Federally aided schools and also for other agricultural teachers.

Curricula now in use need strengthening through greater attention to agricultural economics, agricultural engineering, and the social sciences, and through more general observation of some of the fundamental principles of curriculum construction.

Persons entering teaching from other courses should be expected to supplement these courses with agricultural, as well as professional subjects, so that their training will approximate that of persons graduating from the course in agricultural education.

12. Each institution should have definite arrangements for recruiting desirable students to prepare specially for the teaching of agriculture. Departments of agricultural education should not depend upon the other departments of the institution for students. Closer association with the other branches of teacher training in their respective institutions, resulting from the establishment of a central school of education, would in some cases make it much easier to divert desirable persons from preparing for overcrowded teaching fields into preparation for the teaching of agriculture.

13. Some interchange of teachers among States is desirable but each land-grant institution should be expected to train approximately as many teachers of agriculture as are required in its State. A few institutions fail to meet this criterion.

14. There is great need for research upon the problems of agricultural education. All other agricultural departments in land-grant institutions typically have rather abundant funds for research. The existence of problems which are suited for rewarding investigation should be recognized in this field as well. There has been much waste because it has been necessary for administrators and teacher trainers to proceed without adequate knowledge based on research.

15. In most institutions the training and qualifications of the staff in agricultural education need to be considerably improved. A considerable number of staff members need to supplement their training in agriculture by taking a broader type of training, particularly in the field of general education. Another group has had extensive professional training in education but lacks an adequate acquaintance with agriculture. Those who are responsible for the supervision of student teaching are in particular need of further training.

16. There needs to be further attention to student teaching. All institutions are requiring it but in some instances the requirement seems to be little more than nominal. In nearly all institutions the status of the persons in charge of student teaching should be improved materially.

17. The land-grant institutions have a responsibility for seeing that agriculture is recognized in the rapidly developing junior colleges. The principal means of discharging this responsibility is through the preparation of adequate numbers of agricultural teachers for these institutions.

18. The agricultural education department should have representatives in the extension department of each land-grant institution, as a means of giving better service to and maintaining better relationships with the schools of the State, and also of unifying the programs of the agricultural education and the agricultural extension departments.

19. Departments of agricultural education should recognize a responsibility for keeping up to date and useful its graduates who are engaged in teaching. This involves provision for familiarising them with new agricultural subject matter as it develops, as well as for further professional training. Systems of extension work or itinerant teacher training, if used, should make maximum provision for work with groups, to avoid undue expense.

20. Persons trained in agricultural colleges in agricultural and well-balanced related subjects, who have had consolidated school teaching experience and special training in administration and supervision in a college of education, are ideal persons to serve as superintendents of consolidated schools. The agricultural colleges should make definite provision for the type of training which will start such persons on their way. They have many students who would be attracted by such careers.

21. There is room for the development of a limited number of situations in which graduate work in agricultural education extending to the doctor's degree can be provided. Care must be taken in developing those that there is ample provision for strong supplementary work in general education as well as for specialization in agricultural education.

22. Departments of agricultural education may be expected to play a part in helping the land-grant institutions to throw their influence toward the improvement of the whole rural education situation.

SPECIAL SCHOOLS OF AGRICULTURE

Little change can be noted in the status of subcollegiate agricultural courses outside the Smith-Hughes system. A limited number of special agricultural schools persist, principally in New York, Wiscon-

sin, and Minnesota. A few collegiate institutions administer courses of less than college grade; the most conspicuous recent development of these courses has probably been at the Massachusetts Agricultural College and at Clemson College.

There is a growing realization in certain quarters that the present facilities for giving systematic and relatively prolonged agricultural instruction to the masses of farmers are very limited and that it is likely that they always will be without the inclusion of special schools for training "dirt farmers." Many small communities can not hope to avail themselves of Smith-Hughes facilities. Until larger rural units are provided, the boys in such communities must either go untrained or attend a 4-year agricultural college. There are many boys even in communities having vocational agriculture in the public schools who might be better served by special agricultural courses which would take them out of their home communities during their period of training. It is not unlikely that there may be a recrudescence of interest in schools of this type during the next few years.

EDUCATIONAL ACTIVITIES OF THE FEDERAL FARM BOARD

A new national agency has come to figure largely in agricultural education programs throughout the country with the establishment of the Federal Farm Board under the agricultural marketing act of June 15, 1929. Though not primarily concerned with education, the board has increasingly realized that its program can only come into fruition through a far-flung educational program. Extensive use has been made from the first of the State extension services and the county agricultural agents. In September, 1930, a memorandum of understanding was drawn between the Federal Farm Board and the Federal Board for Vocational Education. During November, 1930, a series of four regional conferences were held at Chicago, Chattanooga, Dallas, and St. Paul between State representatives of the Board for Vocational Education and representatives of the Federal Farm Board. A set of publications dealing with cooperative marketing and intended for use in evening schools has been jointly prepared and distributed by the two boards.

NATIONAL ADVISORY COMMITTEE ON EDUCATION

Considering that agricultural education receives more Federal funds than any other type of education and that the Federal budget for agricultural education for the year ended June 30, 1929, was about sixty-five times the total budget of the United States Office of Education, there was great significance for workers in that field in the appointment by President Hoover, in 1929, of a National Advisory Committee on Education to investigate the whole matter of Federal and State relationships in education.

The preliminary report of this committee, issued on July 4, 1930, suggested the repeal of all existing legislation appropriating Federal money for educational uses and the substitution of a flat grant to the States for educational purposes to be utilized as the States might see fit. This proposal has received the disapproval of the strongest organizations representing workers in agricultural education, the Association of Land-Grant Colleges, and the American Vocational Association, at meetings held during the fall of 1930. No revision of the committee's tentative proposal has yet been issued.

AGRICULTURAL EDUCATION THROUGH NATIONAL RADIO NETWORKS

The biennium has witnessed the introduction of a daily radio program emanating from the United States Department of Agriculture and accessible to nearly every farmer in the country, the "National Farm and Home Hour." In addition to programs directly developed by the Department of Agriculture there have been many programs sponsored by agricultural organizations, such as the Grange, the Farmers' Union, the Farm Bureau, the 4-H clubs, and the American Country Life Association.

ORGANIZATIONS OF AGRICULTURAL EDUCATION WORKERS

The important organizations of workers in agricultural education have remained largely unchanged during the biennium: The Association of Land-Grant Colleges, the Association for the Advancement of Agricultural Teaching, the agricultural section of the American Vocational Association, the four regional conferences affiliated with the Federal Board for Vocational Education, and the national organization of county agricultural agents. Meetings of all of these groups have been held regularly. A new major organization of workers in agricultural education was formed at Chicago on December 5, 1930, the National Cooperative Extension Workers' Association.

IMPORTANT PUBLICATIONS

Allusion has already been made to most of the important publications in agricultural education during 1928–1930. Special mention should, however, be made of certain of these.

Two new monthly publications of great significance have been launched: Agricultural Education, official magazine of workers under the Smith-Hughes Act, which first appeared in January, 1929, and which had attained a circulation of 3,600 by the end of 1930, and the Extension Service Review, first published in 1930 by the United States Department of Agriculture, which performs a similar function for Smith-Lever workers.

Two comprehensive treatises have appeared written by the man who probably participated longer and more widely in agricultural education than any other American, Dr. A. C. True, whose death was one of the great losses of the period this report recounts. One of these works deals with the history of agricultural education in a general way, the other with the history of extension work in agriculture.

Some of the most significant publications of the period, 1928–1930, are listed below.

Agricultural Education. A monthly magazine managed by an editorial board chosen by the agricultural section of the American Vocational Association and published by the Meredith Publishing Co., Des Moines, Iowa.

Agricultural Education, Organization, and Administration. Bulletin No. 13, Agricultural Series No. 1, Federal Board for Vocational Education, 1930. vii, 63 pp.

Agricultural Evening Schools. Bulletin No. 89, Agricultural Series No. 17, Federal Board for Vocational Education, 1930. vii, 15 pp.

Extension Service Review. A monthly publication of the Extension Service, United States Department of Agriculture.

Fourteenth Report of the Federal Board for Vocational Education: 1930. Washington, Federal Board for Vocational Education, 1930. xi, 129 pp.

Master Teachers of Vocational Agriculture. Monograph No. 8, Federal Board for Vocational Education, March, 1930. iv, 16 pp.

Report of the Committee on Training Objectives in Vocational Education in Agriculture, with Suggestions as to Ways and Means of Attaining these Objectives. Washington, Federal Board for Vocational Education, 1930. 50 pp. (Mimeographed.)

Shepardson, Whitney H. Agricultural Education in the United States. New York, The Macmillan Co., 1929. 118 pp.

Smith, C. B., and Wilson, M. C. The Agricultural Extension System of the United States. New York, John Wiley and Sons, 1930. x, 402 pp.

Studies in Vocational Education in Agriculture. Miscellaneous Publication No. 100. (Mimeographed.) Federal Board for Vocational Education, February, 1930. iii, 25 pp.

Survey of Land-Grant Colleges and Universities. Vol. 1. xxviii, 998 pp. Vol. 2. iv, 922 pp. Washington, Government Printing Office, 1930.

The Conference Procedure in Teaching Vocational Agriculture. Bulletin No. 147, Agricultural Series No. 38, Federal Board for Vocational Education, June, 1930. vii, 28 pp.

True, A. C. A History of Agricultural Education in the United States, 1785–1925. Washington, Government Printing Office, 1929. ix, 436 pp.

——— A History of Agricultural Extension Work in the United States, 1785 to 1923. Washington, Government Printing Office, 1928. iv, 220 pp.

Wilson, M. C. Extension Methods and their Relative Effectiveness. Technical Bulletin No. 106, United States Department of Agriculture, September, 1929. 48 pp.

——— Statistical Results of Cooperative Extension Work, 1929. Extension Service Circular 124, May, 1930. 32 pp.

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