DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, No. 38

VOCATIONAL TEACHERS FOR SECONDARY SCHOOLS

WHAT THE LAND-GRANT COLLEGES ARE DOING TO PREPARE THEM

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

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10 CENTS PER COPY

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., October, 1, 1917.

SIR: In the amendment to the agricultural appropriation bill approved March 4, 1907, increasing the Federal appropriation for the support of land-grant colleges, it is provided that these colleges may use a portion of this money for the purpose of providing courses for the special preparation of teachers of agriculture and the mechanic arts. From time to time, as the need for teachers with special preparation in these subjects has increased, the Commissioner of Education has urged the land-grant colleges to use for this purpose liberal portions of the funds coming to them through this act—the so-called Nelson amendment. The great increase of interest in vocational education in high schools within the past few years and the still greater interest which will come as the result of the passage of the act for Federal aid to vocational education in schools below college grade will create a demand larger than all our agencies are now able to supply for teachers of agriculture, trades, and industries, and commercial and home economics subjects. The capacity of existing agencies must be increased or new agencies created. It is therefore desirable to know just what is now done by existing agencies. For this reason I have asked Dr. C. D. Jarvis, specialist in agricultural education in this bureau, to prepare an account of what the land-grant colleges are doing to prepare teachers of agriculture, home economics, and trades and industries for the secondary schools, and am transmitting this account herewith for publication as a bulletin of the Bureau of Education. Later I expect to transmit for publication a similar account of what is done in this field by normal schools and colleges.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

THE SECRETARY OF THE INTERIOR.

VOCATIONAL TEACHERS FOR SECONDARY SCHOOLS.

WHAT THE LAND-GRANT COLLEGES ARE DOING TO PREPARE THEM.

INTRODUCTION.

The Nelson amendment to the agricultural appropriation bill, approved March 4, 1907, which increased the Federal appropriation for the support of the land-grant colleges, provides that "said colleges may use a portion of this money for providing courses for the special preparation of instructors for teaching the elements of agriculture and the mechanic arts."

This legislation, coupled with the contemporary interest in vocational education, has greatly stimulated the higher institutions of learning in the matter of providing special teacher-training curricula. The movement has been stimulated also by State legislation providing for vocational training in the secondary schools. Another stimulus to the work of training teachers of industrial subjects is found in the recent passage by Congress of the Vocational Education Bill, which is intended "to provide for the promotion of vocational education; to provide for cooperation with the States in the promotion of such education in agriculture and the trades and industries; to provide for cooperation with the States in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure." Education in home economics is included in the provision of the bill covering trades and industries.

Since a college training requires four years and since it is difficult to direct students toward a prospective field of service until there is an actual demand for applicants, the institutions in general are about four years behind in providing a supply of teachers of vocational subjects. This condition has resulted in many short-cut methods of training teachers. In many cases college graduates without professional training in education and without teaching experience or practice of any kind have been employed to teach in the secondary schools. In some schools, on the other hand, may be found teachers of agriculture, manual arts, and home economics who have had considerable professional training and adequate experience in teaching but who are decidedly deficient in technical skill and industrial experience. So great is the demand for teachers that certification laws in many instances have been violated or temporarily suspended.

The vocational education act insures the ultimate establishment in every State of a well-formulated program for vocational education. It will result undoubtedly in a greatly increased demand for trained vocational teachers. There is bound to be a peculiar demand upon the colleges for a kind of training much different from that afforded in the past. As sentiment in favor of vocational education grows, as funds become more liberally available, and as the scholastic and technical requirements become more exacting, a higher scale of remuneration will be demanded. This will result, it is hoped, in attracting more men and women of exceptional ability to the teaching profession. The colleges, therefore, will need to give more and more attention to the subject of teacher training until it becomes a dominant part of their work. As industrial education develops, the high schools will assume the responsibility for providing much of the technical training now provided by the colleges during the first two years. The colleges then may be free to train people for the higher professions, including that of teaching. They will be expected, by the training of leaders, to anticipate the educational needs of an ever-changing industrial democracy.

The present paper constitutes the results of an inquiry into the character and extent of teacher training in agriculture, mechanical arts, and home economics among the land-grant institutions. The institutions for the colored race were included in the investigation, but while many of their graduates become teachers, none of them offer professional training courses in a true sense and consequently they have been omitted from the discussion here.

A questionnaire was first sent out to the president of each of the institutions with the request that it be referred to the individuals best prepared to supply the information. Most institutions promptly responded to the request for information, but the replies, especially with regard to the nature and scope of their teacher-training curricula, were quite deficient. This necessitated a great deal of direct correspondence. Most of the information concerning the distribution of the work in the various curricula had been taken directly from the catalogues. Finally, individual statements concerning the teacher-training work were prepared and forwarded to the respective institutions for their verification. The tabulations have been made up from the approved statements. In case an institution failed to return the statement it was assumed to be correct.

The statements are of uniform construction, facilitating comparison. The teacher-training work in each of the three lines—agriculture, home economics, and trades and industries—is discussed under the following heads: (1) Nature and scope; (2) requirements for registration; (3) students; (4) instructors. Concluding each statement, under the heading of "General remarks," is a statement of the

institution's powers and influences concerning certification. These topics, therefore, form a natural basis for discussion in the following pages.

EXPLANATION OF TERMS.

No attempt is made here to standardize nomenclature, but the following definitions are presented merely to avoid confusion:

Course.—A "course," as here used, embraces instruction in a single subject and may extend throughout a term, a semester, or an entire session. In some quotations in the text, however, the term is used in the sense of a curriculum.

Curriculum.—A "curriculum," as used in this paper, embraces several related courses and generally terminates with a certificate or diploma. It may extend over a period of a few weeks, such as those sometimes offered during the summer session, or a period of several years, such as those leading to a degree.

Hour.—The term "hour," or "semester hour," except where otherwise designated, is used to indicate college credit and represents the work of one recitation period, or its equivalent in laboratory or field work, per week for one semester, or 18 weeks. There is much variation among the institutions concerning the duration of the laboratory period, which is expected to be equivalent to a recitation period. At least one-half of the institutions regard two hours of laboratory work equivalent to one hour of recitation work. Others regard two and one-half hours as the proper equivalent, and many maintain a three-hour equivalent. In the comparison of the total number of hours required for graduation, appearing on the following pages, no attempt has been made to adjust this difference, but in Tables 1, 3, and 5 the practice of each institution in this respect is indicated. The total requirements for those adhering to the two-hour principle may be assumed to be from 10 to 20 per cent higher than would be the case with the three-hour laboratory equivalent.

There is also some variation in the duration of the recitation period, ranging mostly from 45 to 60 minutes. So far as information is available, a very large proportion of the institutions adhere to the 50-minute period. A few institutions divide the college year into three terms, and in such cases credit is based upon "term hours." In the present discussion and in the accompanying tables correction has been made for this on the basis that three term hours are equivalent to two semester hours.

Unit.—The term "unit" is used to indicate high-school credit and represents "a year's study in any subject in a secondary school, consisting approximately of a quarter of a full year's work." [1] The north-central association for accrediting secondary schools has a more definite standard, and defines a unit as "a course covering an aca-

[1] Definition by national conference committee on standards of colleges and secondary schools.

demic year that shall include in the aggregate not less than the equivalent of one hundred and twenty 60-minute hours of classroom work, two hours of manual training or laboratory work being equivalent to one hour of classroom work." Both of these definitions allow for the variation in the duration of school periods and the number of periods per week.

While an effort is made among the colleges to standardize entrance units, there still exists the possibility for much variation, as shown from the definitions found in the catalogues, of which the following are representative:

1. One study pursued satisfactorily five times a week for one year.
2. The equivalent of at least four recitations a week for a school year.
3. Five recitation periods per week of 45 minutes each, or four recitation periods of 60 minutes each, for a year of not less than 36 weeks. Two periods of laboratory or shop work or drawing shall count as one recitation.
4. The successful completion of a year's study of a subject to which has been devoted not less than 120 recitation periods of 60 minutes each (7,200 minutes), or their equivalent.
5. The equivalent of five 45-minute periods per week for a full year of 36 weeks.
6. The equivalent of four or five 40 or 45 minute recitation periods per week for at least 34 weeks.

TEACHER-TRAINING CURRICULA IN AGRICULTURE.

EXTENT OF TEACHER TRAINING IN AGRICULTURE.

Of the 48 institutions teaching agriculture, 40 offer a special four-year curriculum for the training of teachers. A few others also have claimed to offer such curricula, but on examination these curricula were found to be so deficient in professional training that the institutions have not been included in the list. A curriculum that does not include at least a two-hour course in special methods of teaching agriculture and at least one three-hour course in either psychology or education is not regarded as a teacher-training curriculum.

As shown in the following pages there is much variation in the methods employed for the training of teachers. This is especially true in the State universities where a part of the curriculum is offered by the college of agriculture and a part by the school or department of education. A four-year curriculum is regarded here as one that includes four years of collegiate work, and may comprise the work of two or more shorter curricula.

Some of the institutions are offering two-year teacher-training curricula, but these are intended mainly for elementary-school teachers.

NATURE AND SCOPE.

For persons preparing to teach agriculture, some institutions offer a special curriculum quite different from the regular agricultural curriculum. Others require such persons to take the regular agricul-

tural curriculum and elect agricultural education as their major option. Some also require prospective teachers to take the regular curriculum, with a major option in some one phase of agriculture, and to carry the necessary educational courses as elective. In some cases the regular agricultural curriculum includes all or part of the educational work required for certification. Other institutions again offer a four-year curriculum in education, with opportunity for majoring in agriculture or any other subject or subjects that the candidate expects to teach.

In general, the same results are accomplished in each case, but there seems to be a divergence of opinion with regard to whether students who are preparing to teach should be given general instruction in agriculture or specialized instruction in some one phase of agriculture. As a whole, the curricula that require specialization include some work, particularly during the first two years, in the various phases of agriculture. It would seem that in sections where the agricultural industry is specialized, prospective teachers would do well to devote a large proportion of their time to such special phases as predominate in the section in which they intend to teach.

On the other hand, there is a disadvantage in specialization in that much of the student's time may be devoted to a training in advance of the needs of the secondary school teacher. A teacher of agriculture in the high school should be well grounded in the fundamentals of agriculture, on the things that all country people need to know, such as the structure and composition of soils and the effects of peculiar methods of treatment, the various operations relating to tillage, the use of farm machinery, the principles and practices underlying plant growth and improvement, the caring for and improvement of live stock, the marketing of crop and animal products, the cause and prevention of diseases in both animals and plants, the control of insect pests, the home and its surroundings, and the economic and social phases of the farmer's business and life.

Distribution of work.—Table 1 shows the proportion of the curriculum offered by each of the institutions that is devoted to each class of subject matter. Under the head of technical agriculture is included all technical instruction except in science and includes all phases of agricultural engineering, such as surveying, drawing, shopwork, irrigation, drainage, farm machinery, and rural architecture. It also includes veterinary work. It does not include such subjects as plant pathology, economic entomology, agricultural chemistry, agricultural botany, and agricultural physics, when taught in the regular science departments. Neither does it include rural economics, but such courses as farm management and farm accounts when given in one of the technical agricultural departments are classed under this head.

Under science are included chemistry, physics, geology, general biology, botany, zoology, entomology, and bacteriology.

Under cultural subjects are included English, composition, public speaking, library science and practice, foreign languages, mathematics, history, civics, economics, sociology, and philosophy (except psychology and education).

Psychology and education are classed together and include courses in special methods, even though these are not given in the department of education. Practice teaching is also included.

Under elective work is included the additional credit required in selected subjects. In most cases the elective work must be approved, and for this reason there is not as much freedom in the choice of courses as the tables seem to indicate. Much of the elective work is likely to be selected from technical or science subjects, although in some institutions students are required to carry as electives some work in the general cultural subjects.

The total requirements listed are, in all cases, exclusive of military and physical education.

TABLE 1.—*Distribution of work required for graduation in teacher-training curricula in agriculture.*

Institutions.	Total requirements (semester hours).	Technical agriculture.		Science.		Cultural subjects.		Psychology and education.		Elective work.		Laboratory equivalent (actual hours).[1]
		Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	
Alabama Polytechnic Institute	185½	69½	37	59	32	38½	21	18	9	5½	3	2
University of Arkansas	136	53	39	40	29	19	14	24	18	.....	.....	2-3
University of California	123	39	32	43	35	8	7	13	11	20	16	2-3
Colorado Agricultural College	154	49	32	57	37	24	16	16	10	8	5	2
Connecticut Agricultural College	149	52	35	47	31	37	25	12	8	1	1	2
University of Florida	128	34	28	31	24	17	13	21	19	22	17	2
University of Georgia and Georgia State College of Agriculture	150	60	40	42	28	24	16	24	16	.....	.....	2
University of Idaho	134	59	44	43	32	10	8	16	12	6	5	3
University of Illinois	123	59	48	32	26	20	16	12	10	.....	.....	2-3
Purdue University	163	77	47	42	26	24	15	20	12	.....	.....	2½
Iowa State College of Agriculture	140	40	29	30	21	20	14	20	14	30	21	3
Kansas State Agricultural College	132	55	41	43	32	12	9	18	13	4	3	3
University of Kentucky	130	61	47	40	31	13	10	16	12	.....	.....	2
Louisiana State University	136	43	32	32	24	12	9	18	23	31	13	3
University of Maine	146	51	35	52	36	20	14	19	13	4	3	2
Maryland State College of Agriculture	200	72	36	51½	26	58½	29	18	9	.....	.....	2
Massachusetts Agricultural College	136½	50½	37	39½	29	33½	24	13½	9	.....	.....	2
Michigan Agricultural College	160	50	31	44½	28	15½	10	10	6	40	25	2
University of Minnesota	144	66	46	30	21	24	17	15	10	9	6	2,3
Mississippi Agricultural and Mechanical College	216½	44½	21	30½	15	114½	53	26½	12	.....	.....	2
University of Missouri	124	49	40	40	32	11	9	24	19	.....	.....	2
University of Nebraska	121	47	39	31	26	21	17	21	17	1	1	3
University of Nevada	144	53	37	48	33	6	5	18	13	19	13	2½
New Hampshire College of Agriculture	130	47	36	35	27	22	17	13	10	13	10	2½
Rutgers College	142	42	30	40	28	48	34	12	9	.....	.....	2-3
Cornell University	120	0	0	38	32	14	12	14	12	54	45	2½-3
North Carolina College of Agriculture and Engineering	173	47	27	54	31	34	19	18	10	20	12	2
North Dakota Agricultural College	142	55½	39	31½	22	27½	19	20	13	8	5	2
Ohio State University	120	42	35	31	26	18	15	22	18	7	6	3

[1] This column shows the practice of the various institutions concerning the amount of laboratory or field work required for each credit hour.

TABLE 1.—*Distribution of work required for graduation in teacher-training curricula in agriculture*—Continued.

Institutions.	Total requirements (semester hours).	Technical agriculture.		Science.		Cultural subjects.		Psychology and education.		Elective work.		Laboratory equivalent (actual hours).
		Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	
Oklahoma Agricultural and Mechanical College	128	39	31	41	32	24	19	24	19	.....	.....	3
Oregon Agricultural College	127	28	22	30	24	13	10	15	12	41	32	2,3
Pennsylvania State College	158	47	30	45	29	41	26	18	11	7	4	2,2½
Rhode Island State College	164	38	23	48	29	52	32	14	9	12	7	2
South Dakota State College of Agriculture	144	48	33	39	27	34	23	19	13	4	3	2½
University of Tennessee	136	37	27	39	29	36	27	24	17	.....	.....	2
Agricultural and Mechanical College of Texas	149	56	38	47	31	22	15	24	16	.....	.....	2
University of Vermont	144	53	37	40	28	33	23	18	13	.....	.....	2
State College of Washington	150	46	31	40	27	35	23	15	10	14	9	2
West Virginia University	143	34	24	38	27	20	14	20	14	31	22	2-3
University of Wisconsin	135	55	41	35	26	11	8	15	11	19	14	2
Total	5,780½	1,948½	.....	1,619½	.....	1,067	.....	721	.....	430½	.....	.....
Average	144½	48¾	34	40½	28	26½	18	18	12	10¾	7	.....

The proportion of time devoted to the various classes of subjects varies considerably. The maximum, minimum, and mean amounts are shown in Table 7. There is a great variation in the total amount of work required. As a rule the institutions with low entrance requirements demand a high graduation requirement and vice versa. The varying methods for recording credit render a comparison of the total requirements very unreliable. As shown in Table 1, some institutions require but two hours of laboratory work for each credit hour, while others require three hours. The requirements of other institutions in this respect are between these two extremes. This variation in method may account for an actual difference in total requirements of from 10 to 30 hours. Since many of the institutions fail to indicate in their description of courses the proportion of classroom and laboratory time, no attempt was made to bring these figures to a common basis. It is well, however, in making comparisons to keep this factor in mind.

Educational courses.—The educational courses offered by the various institutions are shown in Table 8. The purpose of the table is to show the frequency of occurrence rather than a classification of the courses. A column is provided for each of the main courses offered. The headings used are not intended as a logical basis of classification, but represent the actual names by which the courses are designated by the institutions. Courses with unusual designations have been listed either in the column where their titles indicate they belong or in the miscellaneous column. Each distinct part of a combined course, when a definite credit is assigned, is regarded as a separate course. A course that treats of a single

subject, and that extends through two or more terms counts as one course. Even though several courses in special methods, or the so-called "teachers' courses," are offered, only one is included in the tabulation. Since practice teaching often is regarded as a part of some other course, many institutions provide facilities for practice teaching when the table fails to show it. Credit is shown in semester hours. In courses offering a range of credit, such as "two to three hours," the lower figure is listed. Courses that are offered without definite credit are regarded as two-hour courses, except seminars, which are regarded as one-hour courses. Courses in general psychology are not included in the tabulation.

Reference to the table shows that history of education occurs oftener than any other subject. Thirty-nine institutions offer a total of 65 courses, aggregating 208½ semester hours. Following history of education, the courses occurring most frequently are principles of education, educational administration, and educational psychology. In agricultural education 39 courses, aggregating 110 semester hours, are offered. Twenty-two courses, aggregating 67 hours, are offered in rural education. In all, 637 courses, aggregating 1,767 semester hours, are offered.

Practice teaching.—Twenty-nine institutions claim that practice teaching is required in their teacher-training curricula in agriculture. Even though their curricula call for work of this kind, in many cases there appears to be a decided slackness in enforcing the requirement. In some cases the work consists of assisting occasionally in laboratory courses in the college. Sometimes it consists in classroom instruction for freshmen in the regular curriculum or in the "schools of agriculture," which, although their students are of college age or older, are regarded usually as secondary schools. In many cases, however, special high schools are maintained for the purpose, and a definite amount of practice work is required of all students who expect to teach and who are candidates for certification. Other institutions have made provision for an adequate system of practice teaching through cooperation with the local schools. It has been difficult to determine, from the information supplied, the exact nature of the practice work provided in each case. In many cases the request for such information was ignored, even though the catalogues show that practice teaching is a regular part of the work of teacher training.

Typical curricula.—The following curriculum, taken from the 1915–16 catalogue of the Pennsylvania State College, is fairly typical of the teacher-training curricula in agriculture, in which all students pursue the same work during the first two years and in which students

preparing to teach select, agricultural education as their major option:

Teacher-training curriculum in agriculture, Pennsylvania State College, 1916–17.

FRESHMAN YEAR.

First semester.	Credits.	Second semester.	Credits.
General botany	4	General botany	5
Breeds of live stock	3	General chemistry	6
Modern language	3	Farm dairying	2
Algebra	2	Modern language	3
Plane trigonometry	3	Argumentation	3
Composition	3	Military and gymnastic drill	1
Military and gymnastic drill	1		
Military tactics	1		
Total credit	20	Total credit	20

SOPHOMORE YEAR.

Agricultural bacteriology	3	General agricultural chemistry	5
Chemistry (carbon compounds)	2	Farm soils	4
Qualitative analysis	2.5	Genetics	2
Modern language	3	Modern language	3
General geology	3	Plant propagation	3
Mechanics and heat	3	Oral composition	3
Advanced composition	3	Military and gymnastic drill	1
Military and gymnastic drill	1		
Total credit	20.5	Total credit	21

JUNIOR YEAR.

General farm crops	3	Pedagogy of agriculture	3
Stock judging	2	Classification of plants	2
Stock feeding	3	Mechanical drawing	1
Mechanical drawing	1	American economic history	3
English economic history	3	Vegetable gardening	3
Psychology	3	Landscape gardening	3
Forging and metal work	1	Joinery	1
Elementary zoology	3.5	General entomology	4
Total credit	19.5	Total credit	20
		Summer practicum: Practice teaching or special work	6

SENIOR YEAR.

Farm buildings and fences	3	Farm machinery	3
Poultry	3	Principles of education	3
Economics	3	Principles of forestry	3
Class teaching	3	Political parties	3
Practical pomology	5	Elective	6
Elective	1		
Total credit	18	Total credit	18

In the above curriculum the work, exclusive of military and physical training, is distributed as follows: Technical agriculture, 47 hours; science, 45 hours; cultural subjects, 41 hours; psychology and education, 18 hours; elective, 7 hours; total, 158 hours. As may be seen by referring to Table 7, the proportion of work in technical agriculture, in science, and in education is not far from the median requirement. The proportion of time devoted to cultural subjects and the total required work is considerably above the median.

The curriculum of the University of Idaho may be taken as representative of the curricula requiring specialization in some one branch of agriculture and the selection of educational courses as elective. The following outline represents the farm crops major option. The work of the first two years is the same as for other options.

Teacher-training curriculum in agriculture. University of Idaho.

FRESHMAN YEAR.

First semester.	Credits.	Second semester.	Credits.
English literature	2	English literature	2
English composition	1	English composition	1
General chemist.	4	General chemistry	4
General botany	3	General botany	3
Field crops	4½	Market types of live stock	2½
Woodworking	1	Elements of dairying	1½
Military drill	1	Nursery practice	1½
Military regulations	1	Military drill	1
		Military regulations	1
Total credit	17½	Total credit	18

SOPHOMORE YEAR.

Composition	2	Composition	2
Qualitative analysis	3	Quantitative analysis	3
General zoology	4	Farm surveying	2
General bacteriology	4	Breed types of live stock	2½
General horticulture	3	Milk production	3
Military drill	1	Soil physics and fertility	4½
Military science	1	Military drill	1
		Military science	1
Total credit	18	Total credit	18½

JUNIOR YEAR.

Irrigation practice	3	General agricultural chemistry	3
Plant physiology	4	Farm machinery	3½
Farm management	3	Animal nutrition	3
Soils	2	Forage crops	3½
Education (elective)	6	Soil management	2
		Elective	2½
Total credit	18	Total credit	18

SENIOR YEAR.

Plant pathology	4	Farm structures	2½
Plant breeding	2	Crop improvement	2
Thesis	1	Thesis	1
Seminar	1	Seminar	1
Soil chemistry	2½	General entomology	4
Education (elective)	5	Education (elective)	5
Elective	1½	Elective	1½
Total credit	17	Total credit	17

The work of this curriculum, exclusive of military training, is distributed as follows: Technical agriculture, 59 hours; science, 43 hours; cultural subjects, 10 hours; education, 16 hours; elective, 6 hours; total, 134 hours. Reference to Table 7 will show that this curriculum is above the median requirement in technical agriculture and very near the median in science and in education. It is consider-

ably below the median in cultural subjects and in total requirements. Compared with the institutions requiring three hours of laboratory work as the equivalent of one hour of class-room work, it is slightly above the median for total requirements.

REQUIREMENTS FOR REGISTRATION.

Scholarship requirements.—Of the 40 institutions offering teacher-training curricula in agriculture, 38 require for admission at least 14 units of high-school work. Mississippi Agricultural and Mechanical College and the North Carolina College of Agriculture require 10 and 11 units, respectively. The requirements for graduation in these institutions are extremely high, and, if capable of carrying the work, students at the end of the four years in college will have covered practically the same ground as those from many other institutions.

Thirty-two of the institutions require at least two years of collegiate work before registration for psychology and educational courses will be permitted. Two of these institutions require three years of collegiate work. Of the remaining eight institutions, six require one year of collegiate work and two offer courses in psychology during the freshman year. Some of the institutions that list all the professional courses during the last two years permit students to elect psychology during the sophomore year. (See Table 2.)

Occupational experience.—Practical farm experience is seldom a requirement for admission to the freshman class. A few institutions require a certain amount before entering the junior year. Sixteen institutions require some practical farm experience before graduation. The amount varies from six weeks to one year of recent experience. As a rule the experience must either be obtained on the student's home or on an approved farm.

STUDENTS.

Only 34 institutions supplied information concerning the number of students registered, and in these 841 men and 18 women are registered during the college year 1916–17 for training in agricultural education. This number includes all those who have actually declared their intention of preparing to teach and not those who are taking certain courses in psychology and education simply for their cultural training. It includes mainly juniors and seniors, but in the colleges where educational courses are offered during the first two years, freshmen and sophomores are included.

From the 35 institutions reporting the number of graduates, 513 students graduated with professional training in agricultural education in 1916. Of this number, 299 are known to be engaged in the teaching or supervision of agriculture in the schools. Twenty-six institutions report that a total of 112 graduates of the year 1916 from

their regular agricultural curricula are also known to be teaching or supervising agriculture in the schools. Four of these are reported to have had professional training elsewhere, and there may be a few others who belong to this class, but it is safe to assume that the remainder are teaching without having had any professional training or experience in education. (See Table 2.)

TABLE 2. *Requirements for registration, enrollment, graduates, employment, and instructors in teacher-training curricula in agriculture.*

Institutions.	Requirements for registration			Students.					Instructors providing special training in agricultural education.
	High-school units required.	Collegiate requirement in year.	Occupational experience required either before or after entering.	Men registered for special training in 1916–17.	Women registered for special training in 1916–17.	Number graduated with special training in 1916.	Graduated with special training in 1916 now employed in teaching.	Graduated without special training in 1916 now employed in teaching.	
Alabama Polytechnic Institute	14	2	No	0	0	0	0	18	3
University of Arkansas	14	2	No	0	0	0	0	3	3
University of California	15	2	Yes	35	5	20	13		3
Colorado Agricultural College	14	2		10	3	15	5		1
Connecticut Agricultural College	15	2	Yes	24	1	0	0	2	1
University of Florida	15	2		1	0	0	0		1
University of Georgia	15	2		1	0	0	0		1
University of Idaho	15	2	No	30	0	0	0		1
University of Illinois	15	2	Yes	10	0	0	0		1
Purdue University	15	2	No	30	0	0	0		1
Iowa State College of Agriculture	15	2	No	35	0	0	0		1
Kansas State Agricultural College	15	2	Yes	27	0	0	0		1
University of Kentucky	15	2		4	0	0	0		1
Louisiana State University	14	2	No	7	0	1	0		1
University of Maine	14	2		0	0	0	0		1
Maryland State College of Agriculture	14	2	Yes	17	0	3	3	6	1
Massachusetts Agricultural College	14	2	Yes	17	0	3	3	6	1
Michigan Agricultural College	14	2	No	32	3	11	7	7	1
University of Minnesota	15	2	Yes	125	4	30	25	5	1
Mississippi Agricultural and Mechanical College	15	2	Yes	40	0	31	25	6	1
University of Missouri	15	2							1
University of Nebraska	15	2	Yes	25	0	5			1
University of Nevada	15	2	No	7	0	4	4		1
New Hampshire College of Agriculture	15	2		41	0	0	0		1
Rutgers College	15	2	Yes						1
Cornell University	15	2	No	3	0	0	0	4	1
North Carolina College of Agriculture and Engineering	14	2	Yes	43	4	82	35		4
North Dakota Agricultural College	15	2	No	0	0	0	0	3	2
Ohio State University	15	1	No	14	0	14	6	0	2
Oklahoma Agricultural and Mechanical College	15	1							3
Oregon Agricultural College	15	2	Yes	10	0	7	2	3	3
Pennsylvania State College	15	2	No	41	0	19	10	0	3
Rhode Island State College	14	2	No	3	0	1	0	0	1
South Dakota State College of Agriculture	15	1	No	28	0	14	8	2	2
University of Tennessee	14	1							2
Agricultural and Mechanical College of Texas	14	2	No	100	0	32	10	1	4
University of Vermont	14	2	Yes	8	0	1	1	1	1
State College of Washington	15	2	No			15			4
West Virginia University	15	2	Yes	17	0	11	11		4
University of Wisconsin	14	2	Yes	32	0	32	24	8	5
Total				841	18	513	299	112	104

INSTRUCTORS.

The number of instructors who provide the professional training in psychology and education varies from one to seven. In 6 institutions the number is one; in 14 institutions the number is two; in

11 the number is three; in 5 the number is four; and in 2 institutions five instructors provide the professional instruction.

It should not be assumed that these instructors give their whole time to agricultural education, for many of them give regular courses in psychology and education in which there may be large registrations. This is usually the case in the State universities which maintain schools or colleges of education. Many of the institutions maintain a department of agricultural education in which one or two instructors are employed who give their time mainly to agricultural education. In some of the smaller colleges the work in psychology is also given in this department, but where a regular department of education is maintained the agricultural students usually take their psychology and certain educational courses in that department. The general practice is to leave the departments of psychology and education to provide the general training in psychology and education and the department of agricultural education, or some individual in the college or department of agriculture, to provide the training in methods of teaching agriculture. (See Table 2.)

TEACHER-TRAINING CURRICULA IN HOME ECONOMICS.

EXTENT OF TEACHER-TRAINING IN HOME ECONOMICS.

Thirty-three of the land-grant institutions offer four-year curricula for the preparation of teachers of home economics. Since a large proportion of home economics students desire to become teachers, most of the curricula in this subject provide sufficient elective work for students to carry enough in education to meet the requirements for certification. In fact the demand for this professional training has become so general that the regular curricula of some institutions embrace a fairly heavy schedule of required work in psychology and education. Some of the colleges offering training courses report that they are turning out home economics teachers in excess of the demand, but most of the institutions that have established reputations in this line claim that they have no difficulty in locating their graduates.

NATURE AND SCOPE.

In many of the land-grant institutions home economics has been associated with agriculture, and even in the State universities it frequently constitutes a department or a division of the college of agriculture. The tendency at the present time is toward segregation with a view to establishing home economics as a major division of the college or university.

In some institutions home economics is organized as a department of the college of arts and science. In Pennsylvania State College it is a "department" unattached to any of the major divisions, such as the school of agriculture, the school of natural science, etc., but seems to be organically coordinate with them.

Many of the institutions offer two curricula in home economics, one bearing especially upon domestic science or foods and nutrition and the other upon domestic art or textiles and clothing. In some cases they are distinct throughout the four years. In such cases, however, each curriculum requires, during the first two years, some work in both branches. Sometimes the work in both curricula will be the same for the first two years. The institutions with two curricula in home economics usually offer professional courses in each for those who are preparing to teach. As a result they are turning out teachers who are specialists in either one branch or the other. About an equal number of institutions, however, still maintain a single curriculum embracing both branches of home economics. In such cases there is usually sufficient elective work to enable students to specialize to some extent.

TABLE 3.—*Distribution of work required for graduation in teacher-training curricula in home economics.*

Institutions.	Total requirements (semester hours).	Technical home economics.		Science.		Cultural subjects.		Psychology and education.		Elective work.		Laboratory equivalent of lecture hours.[1]
		Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent	Semester hours.	Per cent	Semester hours.	Per cent.	
University of Arizona	120	26	22	27	22	34	27	18	15	15	12	2-3
University of Arkansas	128	54	42	33	26	18	14	18	14	5	4	2-3
University of California	120	41	34	14	12	41	34	12	10	12	12	2-3
Colorado Agricultural College	154	34	22	46	30	45	29	16	10	13	8	2
Connecticut Agricultural College	159½	55	34	48½	30	31	19	14	9	11	7	2
University of Idaho	124	37	30	27	22	24	19	16	13	20	16	3
University of Illinois	127	38	30	25	20	38	30	10	8	16	13	2-3
Purdue University	156	40	26	30	19	66	42	20	13	....	....	2½
Iowa State College of Agriculture	136½	43½	32	45	33	26	19	20	15	2½	2	3
Kansas State College of Agriculture	134	40	29	33	24	34	25	18	13	9	7	3
University of Kentucky	134	51	38	32	24	24	18	16	12	11	8	2
Louisiana State University	136	30	22	24	18	36	27	20	15	36	19	3
University of Maine	146	47	32	39	27	39	27	15	10	6	4	3
Michigan Agricultural College	160	60	38	40	25	26½	17	10	6	23½	15	2
University of Minnesota	132	42	32	27	21	24	18	19	14	20	15	2-3
University of Missouri	120	15	13	10	8	24	20	24	20	47	39	2
University of Nebraska	120	33	28	28	23	26	22	21	18	12	10	3
New Hampshire College of Agriculture	134	46	34	30	22	40	30	18	13	....	....	2½
University of Nevada	134	37	28	30	22	38	28	18	13	11	8	2½
Cornell University	120	23	19	40	33	10	8	14	12	33	28	2½-3
North Dakota Agricultural College	142	34½	24	43½	30	39½	27	16½	12	8	6	2
Ohio State University	120	28	23	32	26	32	26	26	21	2	1	3
Oklahoma Agricultural and Mechanical College	128	50½	40	29½	23	28½	22	19½	15	....	....	3
Oregon Agricultural College	128	27	21	31	24	38	30	15	12	17	13	2-3
Pennsylvania State College	153½	46	30	39	25	39	25	15½	10	14	9	2-2½
Rhode Island State College	160	46	29	50	31	47	29	15	9	2	1	2
South Dakota State College of Agriculture	147	46	31	36	24	46	31	19	13	....	....	2½
University of Tennessee	120	36	30	24	20	30	25	24	20	6	5	2
University of Vermont	120	30	25	24	20	36	30	22	18	8	7	2
State College of Washington	150	58	39	31	21	40	27	15	10	6	4	2
West Virginia University	128	36	28	15	12	37	21	20	16	30	23	2-3
University of Wisconsin	120	40	33	29	24	41	34	10	8	....	....	2
University of Wyoming	124	38	31	36	29	24	29	26	21	....	....	3
Total	4,435½	1,308½	....	1,048½	....	1,086½	....	580½	....	385½	....	....
Average	134	39½	29	31½	23	32½	24	17½	13	12	9	....

[1] This column shows the practice of the various institutions concerning the amount of laboratory or field work required for each credit hour.

Distribution of work.—In Table 3 will be found the actual distribution of work which has been classified as technical home economics, science, cultural subjects, psychology and education, and elective. Technical home economics includes, in addition to the subjects usually taught in the home economics department, many closely related subjects, such as art, design, drawing, architecture, house construction and sanitation, landscape art, floriculture, vegetable growing, and other agricultural subjects occasionally listed.

Under science is included general biology, botany, zoology, geology, chemistry, physics, physiology, bacteriology, hygiene, etc. Such courses as the chemistry of foods and household bacteriology or entomology, unless given by the department of home economics, are regarded as science. As a rule these courses are given in science departments.

English, composition, public speaking, library science and practice, foreign language, history, civics, economics, sociology, philosophy (except psychology), and mathematics are included under cultural subjects.

Psychology and education include courses in methods of teaching, even though these are given in the department of home economics.

Under the heading of elective is included all work not specified but necessary to meet the total requirements.

As indicated under agriculture, it is not safe to place unqualified dependence upon the figures listed under total requirements for the reason that some institutions require only two hours' laboratory work as the equivalent of one hour of classroom work, while others require as much as three hours. This difference in method of giving credit may affect the total requirement to the extent of from 10 to 30 credit hours. The duration of the laboratory periods is shown in Table 8, so that when comparing curricula this variable factor may be kept in mind.

The average distribution of the work of the various kinds is shown at the bottom of Table 3, and the range of the work among the various institutions is shown in Table 7.

Educational courses.—The professional work in the home economics curricula is about the same as for agriculture, except that the course in methods and the practice work pertain to home economics. (See Table 8.)

Practice teaching.—Thirty institutions out of 33 reporting require practice teaching. In the other three, opportunity is afforded for this work, but it is not required. The remarks concerning practice teaching in agriculture are applicable here. As a rule, however, the curriculum requirements generally are more conscientiously carried out.

Typical curricula.—The following curriculum offered by the Kansas State Agricultural College is fairly typical of the curricula embracing both of the main branches of home economics.

Four-year curriculum in home economics, Kansas State Agricultural College, 1917–18.

Freshman year.	Credits.
College rhetoric	6
General chemistry	10
Household physics	3
Library methods	1
Current history	1
Survey of home economics	1
Domestic art (garment making)	2
Foods I	3
Design	3
Costume design	3
Physical training	2
Total credit	35

Sophomore year.	Credits.
Organic chemistry	5
Household microbiology	5
General zoology	5
Embryology and physiology	5
Modern language [1]	6
Clothing	3
Textiles	3
Physical training or music	2
Total credit	34

Junior year.	Credits.
English literature	6
Household management	2
Foods II	5
Human nutrition	3
Gardening	3
Dietetics	5
Psychology	3
History of education	3
Elective	3
Total credit	33

Senior year.	Credits.
American government	3
American history	3
Economics	3
Sociology	3
Marketing and serving	1
Sanitation and public health	3
Home economics education	4
Practice teaching	2
Principles of education	3
Educational psychology	3
Elective	4
Total credit	32

[1] Students who have not offered high-school French or German for college entrance are required to take 3 additional hours' work in a modern language.

In the catalogue outline, which allows 22 hours for free election, no work in education is included. This permits students to carry the necessary 15 hours' work in education and 7 hours' additional work in either branch of home economics.

The distribution of the work of this curriculum, exclusive of physical training, is as follows: Technical home economics, 40 hours; science, 33 hours; cultural subjects, 32 hours; psychology and education, 18 hours; elective, 7 hours; total, 130 hours. By referring to Table 7 it may be seen that the total amount of work required in each class, except elective, is about the median requirement.

The curriculum of the Iowa State College, as shown below, permits students to specialize in either domestic art or domestic science. The work of the first two years is the same for both options. The work of this curriculum, exclusive of physical culture, is distributed as follows: Technical home economics, 43½ hours; science, 45 hours; cultural subjects, 26 hours; psychology and education, 20 hours; elective, 2½ hours; total, 136½ hours. Reference to table 7 will show that this curriculum is slightly above the median in technical home economics and in total requirements. It is decidedly above the median in science requirements and in psychology and education. It is six hours below the median in cultural subjects.

Four-year curriculum in home economics, Iowa State College—Domestic science group, 1916–17.

Freshman year.	*Credits.*
Textiles and clothing	4½
Personal hygiene	1
Plant morphology	1½
Economic botany	1½
General chemistry and qualitative analysis	7½
Drawing	2½
Exposition	3
Narration and description	3
Library methods (4 lectures)	0
Modern language, mathematics	8
American history (West)	2
Physical culture	0
Total credit	35

Sophomore year.	*Credits.*
Foods	4½
Applied art	2½
Applied organic chemistry	4½
Food chemistry	3½
Textile chemistry	1
Plant physiology	1½
General zoology	3½
General physics	5
Literature of modern life	2
Outlines of psychology	3
Educational psychology	3
Physical culture	0
Elective	1
Total credit	34

Junior year.	*Credits.*
Advanced textiles and clothing	4½
Advanced cookery	2½
Marketing, preparation, and serving meals	2½
The house	4½
Physiological chemistry	3½
General bacteriology	3½
Human physiology	7½
Public speaking	2
Social economics	2
Elective	1½
Total credit	33½

Senior year.	*Credits.*
History of art and design	4
Nutrition and dietetics	6½
Household management	1½
Household accounting	2
Home nursing	1
Principles of applied sociology	2
Home economics, journalism, or composition	2
Teaching home economics	6
Principles of teaching	2
Education (elective)	6
Elective	1
Total credit	34

REQUIREMENTS FOR REGISTRATION.

Scholarship requirements.—All of the institutions offering training courses in home economics require at least 14 units of high-school work for admission to the freshman class. Twenty-five require in addition at least two years of collegiate work before registering for the work in psychology and education. Four of this number require three years of collegiate work. Seven require at least one year of collegiate work, while one institution, Oklahoma, does not require any collegiate work for registration in these courses. (See Table 4.)

Occupational experience.—The institutions assume that all students registering for home economics will have had some practical experience in work about the home and therefore do not make this a requirement for admission. Many curricula offer opportunity for independent experience in household management by means of a demonstration cottage.

STUDENTS.

From Table 4 it may be seen that out of the 27 institutions which reported, 1,318 women are now registered for professional training in home economics education. Out of 28 institutions reporting, 663 graduated with professional training in 1916. Of these, 487 are known to be engaged in teaching or supervising home economics. Nine 1916 graduates in home economics, without professional training, are also known to be engaged in school work.

INSTRUCTORS.

In the 32 institutions from which information has been obtained, 91 instructors provide the special training in psychology and education for home economics students who are preparing to teach. Many of these instructors are in the regular department of education and furnish instruction to students preparing to teach other subjects. As a rule, the course in methods is given by a member of the home economics department. Many of the instructors in home economics have had professional educational training and for this reason the curricula are usually well organized from the standpoint of teacher training. (See Table 4.)

TABLE 4.—*Requirements for registration, enrollment, graduates, employment, and instructors in teacher-training curricula in home economics.*

Institutions.	High-school units required.	Collegiate requirements, in years.	Number registered for special training in 1916–17.	Number graduated with special training in 1916.	Graduated with special training in 1916 now engaged in teaching.	Graduated without special training in 1916 now engaged in teaching.	Instructors providing special training in home economics education.
University of Arizona	15	1	2	0	0	2	2
University of Arkansas	14	2	45	8	8	0	2
University of California	15	3	47	33	23	0	2
Colorado Agricultural College	15	2	50	30	20	0	5
Connecticut Agricultural College	14	2	0	0	0	0	2
University of Idaho	15	3	5	5	5	.....	3
University of Illinois	15	3	78	36	30	.....	3
Purdue University	15	1	151	27	20	0	4
Iowa State College of Agriculture	15	1	100	75	67	0	6
Kansas State Agricultural College	15	2	185	101	70	0	4
University of Kentucky	15	2	7	0	0	0	3
Louisiana State University	14	2	0	0	0	0	2
University of Maine	14½	2	65	3	3	0	2
Michigan Agricultural College	15	3	60	57	45	0	2
University of Minnesota	15	2	132	38	33	0	3
University of Missouri	15	2	100	30	.....	.....	7
University of Nebraska	15	2	.....	.....	.....	.....	3
University of Nevada	15	2	15	0	0	.....	3
New Hampshire College of Agriculture	15	1	.....	.....	.....	.....	2
Cornell University	15	2	33	33	17	.....	3
North Dakota Agricultural College	15	2	18	26	25	0	3
Ohio State University	15	2	.....	.....	.....	.....	.....
Oklahoma Agricultural and Mechanical College	15	0	.....	.....	.....	.....	3
Oregon Agricultural College	15	2	75	68	56	0	5
Pennsylvania State College	15	2	12	15	12	0	2
Rhode Island State College	14	2	12	3	1	0	2
South Dakota State College of Agriculture and Mechanic Arts	15	1	46	16	15	0	4
University of Tennessee	14	1	.....	.....	.....	.....	3
University of Vermont	14½	2	6	6	6	1	2
State College of Washington	15	2	.....	16	.....	.....	4
West Virginia University	15	2	10	4	4	2	4
University of Wisconsin	14	2	36	27	25	4	4
University of Wyoming	15	1	26	6	2	0	6
Total	.....	.....	1,318	663	487	9	105

TRADES AND INDUSTRIES.

EXTENT OF TEACHER TRAINING IN TRADES AND INDUSTRIES.

Fourteen of the land-grant institutions offer four-year curricula in manual arts for teachers. There has not been much demand for training of this kind requiring four years of collegiate preparation. Institutions of various kinds throughout the country have been offering manual training and trade curricula covering periods ranging from a few months to two years, but the land-grant colleges have done very little to meet the demand for short-time curricula. The demand for trade and industrial teachers is a comparatively recent one, and educators have been somewhat doubtful regarding the nature of the training that trade teachers should have. The lack of a definite plan for teacher-training has retarded the progress of vocational education. The supply of properly trained teachers is still the controlling factor in the development of this popular and promising type of education.

As a result of the recent passage by Congress of the Vocational Education Bill, the various States, to avail themselves of its benefits, must formulate plans for a State system of industrial education. These plans, necessarily, will include provisions for teacher training. There is little doubt that the land-grant colleges and State universities will be called upon to prepare teachers of agriculture and home economics, and, with an appropriate system of extension schools, there seems to be no good reason why they should not prepare trade-school teachers as well. There is a strong argument in favor of the practice of incorporating the several State institutions of higher learning into their respective State school systems. Legislative enactments, defining their duties with regard to teacher training should go a long way toward bringing about coordinated effort. These institutions alone are not going to be able to supply the demand of the coming years and technical schools of a secondary grade will continue to train teachers for the trade schools as they have been doing in the past. All institutions with facilities for the promotion of this kind of training should speedily formulate curricula adapted to present needs. The National Society for the Promotion of Industrial Education [1] has offered valuable suggestions along this line, and it is encouraging to note that some of the land-grant colleges are preparing to carry out its recommendations. Iowa State College, for example, states that:

> We are planning now to have evening schools established in three or four different points in the State, naturally in the larger industrial centers. At these points, training will be given in the following subjects: Trade mathematics, trade drawing,

[1] The Selection and Training of Teachers for State-Aided Industrial Schools, Bul. 19, revised edition, 1917.

English, civics, industrial education, practice teaching, and class management, and possibly physiology and hygiene. Men admitted to these courses will be experienced tradesmen who desire to teach.

The University of Wisconsin conducts what it calls a "Mechanic's Institute" and offers a scholarship of $60 to each of 12 skilled craftsmen who will come to the institution for 8 weeks of special work in teacher training.

The Pennsylvania State College offers a special two-year curriculum for those who have had trade experience and are anxious to obtain professional teacher training.

NATURE AND SCOPE.

It is apparent that the institutions themselves are conscious of the fact that the teacher-training curricula as now offered are not meeting present needs, for only in a few cases have they attempted to supply the requested information concerning the enrollment and graduation of students.

The four-year curriculum in manual arts, with some modifications, will probably be maintained in the colleges for the purpose of preparing teachers of supplementary subjects, such as drafting and the sciences, and other persons for administrative positions. But for the purpose of preparing trade-school instructors, the demand is for a short curriculum extending over a few months, either during the day or evening, and open to the craftsmen who desire to enter or may be persuaded to enter the teaching profession.

Distribution of work.—Table 5 shows the distribution in credit hours of the various kinds of work, such as technical manual arts, science, cultural subjects, education, and elective. The grouping of the subjects is the same as described under agriculture, except that the first group embraces technical manual arts. The work in shop mathematics and descriptive geometry is classed under technical manual arts instead of cultural subjects, where work in general mathematics appears.

The average amount of work in each group of subjects is as follows: Technical manual arts, 48½ hours; science, 20 hours; cultural subjects, 44 hours; psychology and education, 20 hours; elective, 12 hours; total, 145 hours. On account of the small number of institutions considered and because of a few exceptional cases, such as the amount of cultural work required by the Mississippi Agricultural and Mechanical College, these averages are somewhat misleading. Table 7 shows the range of requirements in each group of subjects.

TABLE 5.—*Distribution of work required for graduation in the teacher-training curricula in trades and industries.*

Institutions.	Total requirements (semester hours).	Technical manual arts.		Science.		Cultural subjects.		Psychology and education.		Elective.		Laboratory equivalent (actual hours).[1]
		Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	Semester hours.	Per cent.	
Colorado Agricultural College	154	77	50	20	13	30	20	16	10	11	7	2
Maryland Agricultural College	200	88	44	20	10	78	39	14	7	0	0	2
Mississippi Agricultural and Mechanical College	216	55½	26	17½	8	116½	54	26½	12	0	0	2
University of Missouri	120	15	13	10	8	24	20	24	20	47	39	2
New Hampshire College of Agriculture	130	49	38	24	19	41	32	16	12	0	0	2½
North Dakota Agricultural College	142	53½	37	17½	12	31½	22	19½	13	20½	14	[illegible]
Ohio State University	120	36	30	16	13	38	32	28	23	2	2	[illegible]
Oklahoma Agricultural and Mechanical College	128	39	31	41	32	24	19	24	19	0	0	3
Oregon Agricultural College	126	51	41	12	10	25	20	16	13	22	18	2, 3
Pennsylvania State College	153	69	45	9	5	51	33	16	11	8	5	2, 2½
South Dakota State College of Agriculture and Mechanic Arts	144	21	14	44	31	50	34	19	13	10	7	2½
University of Tennessee	126	38	30	24	19	40	31	24	19	0	.....	2
State College of Washington	150	40	27	15	10	40	27	35	23	20	13	2
University of Wisconsin	120	47	39	10	8	28	23	9	8	26	22	2
Total	2,020	678½	.....	279½	.....	617	.....	287	.....	166½	.....	.....
Average	145	48½	33	20	14	44	30	20	14	12	8	.....

[1] This column shows the practice of the various institutions concerning the amount of laboratory or field work required for each credit hour.

Educational courses.—The educational courses and the total requirements in psychology and education are about the same as for agriculture. The amount of professional work required ranges from 9 to 35 hours, the average being 19 hours. (See Table 8.)

Practice teaching.—Ten out of twelve institutions offering training courses require practice teaching, and it is available but not required in the other two cases. It is provided either through cooperation with local schools, in special demonstration schools maintained for the purpose, or in regular class or laboratory work in the institution itself.

Typical curricula.—The four-year curricula for manual arts teachers are very similar, and the following offered by the Oregon Agricultural College will serve as an example. Exclusive of military and physical training, the curriculum requires a minimum of 126 hours, distributed about as follows: Technical manual arts, 51 hours; science, 12 hours; cultural subjects, 25 hours; psychology and education, 16 hours; elective, 22 hours. As may be seen from Table 7, this curriculum is somewhat below the median in science, cultural work, education, and total requirements. By omitting the two institutions with abnormal requirements from the computation, the total requirements are very slightly below the average.

Four-year industrial arts curriculum for teachers, Oregon Agricultural College, 1916–17:

Freshman year.	*Credits.*
Modern English prose	6
Trigonometry	3
Commercial geography	3
General chemistry	6
Shop drawing	4
Manual training	6
Industrial arts drawing	2
Library practice	½
Hygiene	½
Military drill	2
Gymnastic drill	1
Total credit	34

Sophomore year.	*Credits.*
Modern language or approved elective	6
General physics	6
Pattern making and foundry practice	6
Woodworking	2
Industrial arts design	1
Mechanical drawing	3
Military drill	2
Gymnastic drill	1
Electives	6
Total credit	33

Junior year.	*Credits.*
Modern language or approved elective	6
General psychology	3
Educational psychology	2
Principles of education	3
Forging	2
Hammered metal work	2
Elementary house planning	3
Descriptive geometry	3
Commercial woods	2
Plumbing	2
Military science and drill	4
Elective	2
Total credit	34

Senior year.	*Credits.*
Special methods of teaching	4
History and theory of vocational education	2
Machine shop	4
Manual training for elementary grades	2
Machine drawing and design	3
Applied mechanics	3
Power and hydraulics	3
Electives	14
Total credit	35

REQUIREMENTS FOR REGISTRATION.

Scholarship requirements.—Eleven out of fourteen of the institutions offering teacher-training courses in manual arts require 15 units of high-school work for admission to freshman standing. Two require 14 units and one requires 10 units of high-school work. Four institutions require in addition to this two years of collegiate work before registration for the educational courses is permitted. Eight others require but one year of collegiate work, while two institutions permit registration in one or more of the educational courses during the first year in college. (See Table 6.)

Occupational experience.—The records show that none of the institutions in their effort to prepare teachers for the trades and industries require previous occupational experience for registration in their four-year curricula. Eight of the institutions failed to supply information concerning this point, but it is assumed that the failure to fill in the information is equivalent to a negative answer.

STUDENTS.

Since only nine institutions supplied information concerning registration and graduation of students, the result of the inquiry in this respect is unsatisfactory. The University of Wisconsin reports that 45 students, 30 men and 15 women, are registered in 1916–17 for teacher-training in industrial arts. South Dakota State College reported 48 men and 20 women enrolled. Oregon Agricultural College reports a registration of 14; the University of Missouri, 25; and Colo-

rado Agricultural College and Pennsylvania State College each reports 5; and Maryland State College and North Dakota College of Agriculture each report 1; making a total of 164. The record shows that 32 students graduated with special training in 1916, of whom 24 are known to be engaged in teaching. (See Table 6.)

INSTRUCTORS.

Forty-four instructors provide the special instruction for the training of teachers in trades and industries. As indicated under agriculture, these instructors, with few exceptions, furnish instruction to general classes in education. In some institutions one or more instructors devote all of their time to methods of teaching manual arts.

TABLE 6.—*Requirements for registration, enrollment, graduates, employment, and instructors in teacher-training curricula in trades and industries.*

Institutions.	Requirements for registration.			Students.					
	High-school units required.	Collegiate requirements in years.	Occupational experience required?	Men registered for special training in 1916-17.	Women registered for special training in 1916-17.	Number graduated with special training in 1916.	Graduated with special training in 1916 who are now engaged in teaching.	Graduated without special training in 1916 now engaged in teaching.	Instructors giving training courses for teachers of trades and industries.
Colorado Agricultural College	15	2	No	5	0	2	2	.....	2
Maryland State College of Agriculture	15	2	.....	1	0	0	0	.....	2
Mississippi Agricultural and Mechanical College	10	0	.....	.....	.....	.....	.....	.....	2
University of Missouri	15	2	.....	25	0	7	.....	.....	7
New Hampshire College of Agriculture	15	1	.....	.....	.....	.....	.....	.....	2
North Dakota Agricultural College	15	1	.....	1	0	0	0	2	2
Ohio State University	15	1	.....	.....	.....	.....	.....	.....	.....
Oklahoma Agricultural and Mechanical College	15	0	.....	.....	.....	.....	.....	.....	.....
Oregon Agricultural College	15	2	No	14	0	12	12	9	3
Pennsylvania State College	15	1	No	5	0	3	3	0	7
South Dakota State College of Agriculture and Mechanic Arts	15	1	No	48	20	8	7	1	2
University of Tennessee	14	1	.....	.....	.....	.....	.....	.....	3
State College of Washington	15	1	No	0	0	0	0	0	4
University of Wisconsin	14	1	No	30	15	.....	.....	.....	5
Total	.....	.....	.....	129	35	32	24	12	44

TABLE 7.—*Maximum, minimum, and median requirements for graduation in teacher-training curricula.*

Curricula.	Total requirements.	Technical subjects.	Science subjects.	Cultural subjects.	Professional subjects (psychology and education).	Elective subjects.
	Semester hours.	*Semester hours.*	*Semester hours.*	*Semester hours.*	*Semester hours.*	*Semester hours.*
Teacher-training curricula in agriculture:						
Maximum requirements	217	77	50	115	27	54
Minimum requirements	120	0	30	6	10	0
Median requirements	142	49	40	22	18	5
Teacher-training curricula in home economics:						
Maximum requirements	160	60	50	66	26	47
Minimum requirements	120	15	10	10	10	0
Median requirements	132	40	31	34	18	11
Teacher-training curricula in trades and industries:						
Maximum requirements	216	88	44	117	35	47
Minimum requirements	120	15	9	24	9	0
Median requirements	136	48	17	39	19	8

CERTIFICATION OF TEACHERS.

In the individual statements concerning the work of the various institutions will be found brief remarks concerning the certification of teachers. These remarks, generally, have been copied directly from the catalogue of the institution concerned and in such cases are shown as quotations. In a few cases the information was obtained from correspondence or from other documents of the Bureau of Education.

In some institutions there is a conscious belief that the requirements for certification are too high when applied to such special subjects as agriculture, home economics, and trades and industries. It is plainly evident, also, that the requirements are not always enforced. In some cases, courses like rural economics, physiology, hygiene, etc., are offered in lieu of certain educational courses. Undoubtedly the substitutions are generally more useful to the prospective teacher than some of the required work in psychology and education. Some institutions require as high as 10 hours in psychology, which, for teachers of certain academic subjects, may be justifiable, but for teachers of subjects like those under consideration, which require so much technical preparation, there is danger of sacrificing technical proficiency for professional training.

It is probable that the time commonly devoted to strictly educational courses is longer than is necessary. It is a question of relative value, of course, and in many cases it would seem desirable to omit some of the professional courses to make way for more technical and scientific work which the teacher should have and is denied him on account of the limited time.

Public criticism of vocational teaching is directed more often to the practical deficiencies of teachers than to lack of academic knowledge or of administrative ability. The chief opposition to voca-

tional training comes from practical artisans who complain that the school work is not practical and too far removed from actual industrial conditions. This is true of nearly all vocational subjects, but it is especially true of the teaching of manual arts.

Certification laws will need to be revised to meet the needs of industrial education. The National Society for the Promotion of Industrial Education in their recent Bulletin (No. 19, p. 17, Revised Edition) calls attention to the deficiencies of the present system and makes valuable suggestions for future legislation. Their statement follows:

> Excellent as the foregoing plan [usual practices] may be for the purpose of licensing teachers of the regular public schools, it is inadequate to meet the problems of certificating teachers for State-aided industrial schools.
>
> The prevailing method of certificating regular school teachers fails to pass upon all the qualifications necessary for industrial school service. The tests given are usually limited to qualifications of teaching ability and general education. Industrial experience and personal qualifications, other than those of health, are seldom included. Unless certification covers all the qualifications which industrial school teachers should have, many persons lacking the right preparation will secure the legal right to teach in these schools. This at once opens the way to the employment of inefficient teachers, and is sure to retard, if not entirely prevent, the proper development of the schools.
>
> The present schemes of certification seldom provide adequate means of testing such things as trade knowledge, personality, and teaching skill, even when these qualifications are included in the State requirements for industrial school teachers. In many cases no effective use is made of personal interviews or of credentials for furnishing information of various kinds. Nor is proper attention given to practical tests and demonstrations or a systematic plan of probation teaching.
>
> Too much dependence is placed upon the written examination as a means of testing the candidate's qualifications. It is self-evident that a written examination alone can not adequately test personal and trade equipment. Nor can it give proof of such things as the faculty to handle young people, organizing and executive ability, the capacity to cooperate with others, and interest in the work in which the applicant seeks employment. Furthermore, the written examination alone is an inadequate and unsatisfactory device for testing many of the things for which it has traditionally been used, such as general schooling, power to use knowledge, and the ability to teach.
>
> The common practice in the certification of teachers for public-school work does not meet the needs of State-aided industrial schools, because it fails to give sufficient consideration to the necessity of cooperation between the State and local authorities. In the establishment and maintenance of a system of State-aided schools it is a well-recognized principle that the control of such schools should be shared jointly by the State and the local community. Their relationship should be that of partners in the educational business of the State. In the selection of teachers, as in all other matters of support and control, each partner should bear his proper share of this joint responsibility.
>
> In the process of securing competent teachers three steps are involved: Certification, employment, and approval. Certification is the process whereby the State confers upon an individual the legal right to teach in its schools. Employment is the act by which a local community engages the services of a properly-certified teacher. Approval is the final step by means of which the State, after inspecting the work of a teacher, pronounces it satisfactory, and consents to this teacher's reemployment.

It is clear that the responsibility of the State for the selection of teachers for State-aided industrial schools is greater than the usual responsibility which it has in relation to non-State-aided schools. In discharging this responsibility it is the business of the State to establish minimum standards covering all the qualifications which industrial school teachers must have and to devise an adequate system of examination and certification. Such a system, however, must be carried out in close cooperation with the local school officers in such matters as fixing standards and obtaining the information necessary to pass upon the fitness of candidates.

It is the duty of the local community to discharge the second function, that of employment. This it should do in cooperation with the State by investigating at the time of appointment the qualifications of candidates from the accredited State list with reference to their fitness for local service.

The final act of approval for reemployment rests with the State. It should be carried out, however, only after systematic examination of the candidate's work and frequent consultations with the local school officials. The local school authorities ought to possess some option in the matter of approval in that they should not be required to reemploy an unsatisfactory teacher, even though approved by the State.

From the foregoing discussion the conclusion is inevitable that to secure an effective plan for passing upon the qualifications of properly equipped teachers for State-aided industrial schools either an entirely new scheme of certification must be devised or important modifications made in the one now commonly employed. The next section discusses proposed plans for a new scheme of certification.

TABLE 8.—*Semester hours devoted to and the frequency of occurrence of*

(Courses that are offered without definite credit are regarded as two-hour courses, except seminar courses, courses included in making up

Institutions.	History of education.	Educational psychology.	Child study.	Adolescence.	Tests and measurements.	Defective and exceptional children.	Principles of education.	Theory of education.	Philosophy of education.	Elementary education.	Secondary education.	High-school education.
STATE UNIVERSITIES.												
University of Arizona	3	3										
University of Arkansas	3	3	3	3								
University of California	(3)6	(3)6					(2)6	3				
University of Florida	3	3	3				3					
University of Georgia	(2)5	2					3		3			
University of Idaho	(2)5	4					3	3				
University of Illinois	(2)8	(2)8			2	2	4		2	1	2	3
University of Kentucky	(2)6	3					3			2		
Louisiana State University	(2)6								4			
University of Maine	3			3			3			3	3	
University of Minnesota	(3)15	3			2	3	(2)6					
University of Missouri	5	(2)5	2		2	1	3	(2)6	3	2		
University of Nebraska	(3)11	2	3	4	2		2		4	(2)4	(3)6	
University of Nevada	4		3				3					3
Cornell University	3	(2)5		2	6	2	3					2
Ohio State University	(5)20	4			3	(2)6	(4)15		4	6	6	
University of Tennessee	(2)8						3				(2)6	
University of Vermont	6	3					6		6			
West Virginia University	(3)5	2			2		(2)6	3	6			
University of Wisconsin	(3)10	(4)9	2		2		2					
University of Wyoming	3	(2)6	3		3		3			(3)16		3
STATE COLLEGES.												
Alabama Polytechnic Institute		3		3			6				4	
Colorado Agricultural College	5											
Connecticut Agricultural College		3					3		3			
Delaware College							5					
Purdue University	3	6	1	1			3					1
Iowa State College of Agriculture	4						2					(2)4
Kansas State Agricultural College	3	3					3					
Maryland State College of Agriculture	2						2					
Massachusetts Agricultural College	3	3										
Michigan Agricultural College	3	(2)6										
Mississippi Agricultural and Mechanical College	(2)5	3					3					
Montana College of Agriculture								4				
New Hampshire College of Agriculture	(2)4			3			3				3	
Rutgers College	(3)6	4			3		2				4	
New Mexico College of Agriculture		5										
North Carolina College of Agriculture and Engineering	3		2								3	
North Dakota Agricultural College	2		2				2					2
Oklahoma Agricultural and Mechanical College	2	3	2		2		2	2	2			
Oregon Agricultural College	3	2	2				3					
Pennsylvania State College	3	3	3		2		3				3	
Rhode Island State College	3						3				3	
Clemson Agricultural College												
South Dakota State College of Agriculture	3	3		3	3		3					
Agricultural and Mechanical College of Texas		3									3	
Agricultural College of Utah												
Virginia Agricultural and Mechanical College												
State College of Washington	(2)8	3	3				3					3
Frequency	65	42	13	8	13	6	43	7	12	13	23	12
Total semester hours	206½	122½	34½	22	32	14	134½	21	42	41	76	32

[1] At least part of the work given in the college of agriculture.

certain courses in education offered by the land-grant (1862) institutions.

which are regarded as one-hour courses. The numbers within parentheses indicate the number of the number of hours listed.)

Vocational and industrial education.	Agricultural education.	Rural education.	Social education.	Moral and religious education.	Administration.	Classroom management.	Supervision.	Educational systems.	Educational movements.	School hygiene.	General methods.	Special methods (teachers courses).	Observation, practice, curricula.	Seminar courses.	Correspondence courses.	Miscellaneous.	All educational subjects.	Total semester hours.
2			2	2	3			2		3	5	3		2			14	38
3	(4)12	3	(2)5	2	(2)6	3		(2)4	2	3	(3)7	3	16	4(4)16	(2)4	(3)6	43	134
						1	2		2		(2)10	1	3				19	58
	2	(2)4	(2)10		(2)5							1	2 (2)2		2			28
2	1	2	3		3	2						2	2			(2)4	15	46
3	(2)6		(2)4		3		3	1		2		2	3 (3)3			(2)4	22	67
	1 3	3	3	3	(2)4							3	3(2)4			3	16	44
2					6							3	3			4	16	46
2					3							3	4	2			13	35
2	(2)6	2	3	(2)6	(3)6		2		3	3	3	3	(2)6 (3)6			(3)2	30	88
	1	5			(3)7		(2)4	6		1		2	(2)5 (6)6		(6)8	(2)3	34	92
	1 2				2	(2)4	(2)4	2		2		3	(2)3 2			2	27	82
					3		3					3	5		(2)4	2	14	36
	1 (2)6										(3)14	2					17	42
	1 (4)12				(6)11					2	3	3	1 2 1		2	3	29	101
	1 3	3			4							2	3 (2)8		1		11	34
6	1 6				2					3		3	3				9	37
	1 (2)5				5		2 (2)6			2		1	1				22	61½
	1 2		(2)5				2 (4)8		2			2	2 (3)7½			3	30	59
	1 4	(3)9	2		(3)10					2	(2)6	2	2 (3)3		1 2	(3)6	31	110
												3	10	4	(2)6	(5)14		
		2	5				2					4	(2)6			2	11	37
						3						3					3	11
												3					4	13
1					1	1											2	6
2	2				2		2					2					10	30
3	(2)5	3			3							2 3	3	2	2	2	13	30
	2½	(2)4										3	2	2	2	3	14	38
	5	6½										2½			1½		7	16
	3½				3½											6½	5	25½
				3½	4	3½		2				2	2				6	20
																	11	32½
2					2					2							9	22
	5				4							3					9	35
		4											5				2	9
	3	3				3						3	3				7	21
2	1	1½	1½		(2)4½							1½			1½	1½	14	38
		2		2	2						2	2					12	35
2					2				3	2		4			(2)4		11	35
	(3)6				2	3						2	6	2			14	38
												1				1	5	11
3			3		3							1					1	3
3	(2)6	3			3							3	2				9	28
																	8	24
2					3					2		2	2			2	12	35
17	39	22	17	7	43	10	12	13	6	14	18	39	32	36	20	35	637	
42	110	67	49½	18½	122	23½	32	34	13	30	61	92½	100	63½	47½	76		1,767½

THE WORK OF TEACHER TRAINING IN THE LAND-GRANT COLLEGES.

ALABAMA POLYTECHNIC INSTITUTE.

AGRICULTURE.

Nature and scope.—Students preparing to teach pursue the regular four-year curriculum, electing a major option in one of five groups representing the main branches of agriculture. In each option opportunity is given for the election of the educational courses necessary for State certification. The distribution of the work of such a schedule is about as follows: Technical agriculture, 69½ hours; science, 59 hours; cultural subjects, 38½ hours; psychology and education, 18 hours; total, 185½ hours.

The educational courses required to qualify for the State teacher's certificate and the semester credits for each are as follows: Principles of education, 6 hours; secondary education, 4 hours; principles and practice of teaching, 2 hours; educational sociology, 2 hours; rural educational practice, 2 hours; school supervision, 2 hours. The following courses are open for election: Elementary and educational psychology, 6 hours; school curricula, 4 hours; library methods, 2 hours; special methods of teaching agriculture, 1½ hours. In the last-named courses "special attention is given to the selection of material for illustrating the principles of agriculture, and practice will be given in conducting a number of simple demonstrations. Frequent excursions are made in the fields."

Requirements for registration.—Fourteen units of high-school work and two years of collegiate work.

Students.—Owing to the recent establishment of the department of education, no students have been graduated with special training in agricultural education. Eighteen of the 1916 graduates from the regular agricultural curriculum are now engaged in teaching.

Instructors.—Three instructors provide the special training in agricultural education.

HOME ECONOMICS.

This institution offers no curriculum in home economics.

TRADES AND INDUSTRIES.

No special teacher-training curriculum offered, but students in mechanic arts and engineering may elect courses in education.

GENERAL REMARKS.

Certification.—"The State department of education, by recent ruling, will grant to certain graduates of the leading colleges of Alabama first-grade and life certificates. The requirements for these certificates are that graduates must have pursued courses in education amounting to nine hours (18 semester hours)."

UNIVERSITY OF ARIZONA.

AGRICULTURE.

No special teacher-training curriculum is offered at the present time. The institution is planning for such work for the college year 1917–18.

"The new curriculum will include almost the same work as the regular agriculture course, with the inclusion of one or two courses specially needed by such as are to meet practical school problems, as well as a minimum of 12 semester hours of education, such as would fit the regular college graduate to meet the requirements for the teachers' certificate, as now in operation."

HOME ECONOMICS.

Nature and scope.—In 1913–14 a teacher-training curriculum was offered for the first time. Two curricula in home economics are offered—one each for those who desire to specialize in textiles and clothing. Each of these curricula includes professional courses in education. The distribution of the work, exclusive of physical training, is about as follows: Technical home economics, 26 hours; science, 27 hours; cultural subjects, 34 hours; education, 18 hours; elective, 15 hours; total, 120 hours.

The educational courses include psychology, 6 hours; history of education, 8 hours; and theory and practice of teaching home economics, 4 hours. Many other courses in education are open for election. No information concerning the nature and extent of practice teaching has been applied.

Beginning with the year 1917–18 a modified curriculum, similar to the new agricultural curriculum, is offered.

Requirements for registration.—Fifteen high-school units and at least one year's collegiate work. Senior standing is required for the course in theory and practice.

Students.—Two women are enrolled in 1916–17 for the special educational work. Owing to the recent introduction of the educational work, no students have yet been graduated with professional training. Two 1916 graduates from the regular curriculum are now engaged in teaching.

Instructors.—Two members of the faculty provide the professional training in home economics.

TRADES AND INDUSTRIES.

No curriculum for the special preparation of teachers in trades and industries has been offered. "The college of engineering in 1917–18 offers a teacher-training curriculum with special reference to manual training and industrial arts. The course here includes, too, the regular 12 hours in education."

GENERAL REMARKS.

Certification.—"By action of the State board of education very recently taken, the requirements are as follows: Three semester hours of history of education, three semester hours of either educational psychology or principles of education, three hours of some form of school management or administration, and enough additional work in education to make a total of 12 hours. The meeting of the above is now the basis for the issuing of first-grade certificates to graduates of accredited colleges without examination."

UNIVERSITY OF ARKANSAS.

AGRICULTURE.

Nature and scope.—The four-year curriculum offers a major option in agricultural education leading to a bachelor's degree and to the certificate "licentiate of instruction." The work of the first two years is the same as for other agricultural options. The distribution of the work, exclusive of military training, is about as follows: Technical agriculture, 53 hours; science, 40 hours; cultural subjects, 19 hours; psychology and education, 24 hours; total, 136 hours.

The educational courses include general psychology, 3 hours; educational psychology, 2 hours; history of education, 3 hours; the teaching process, 2 hours; the modern high school, 2 hours; observation and the curriculum, 2 hours; and practice

teaching, 8 hours. The practice work consists of "the daily teaching for one hour in the training school" throughout the year.

Requirements for registration.—Fourteen units of high-school work and two years of collegiate work. No occupational experience is required.

Students.—Two men are enrolled in 1916–17. None graduated in 1916. Three 1916 graduates from other agricultural options are now engaged in teaching or supervision of agriculture in the schools.

Instructors.—Two instructors provide the professional instruction in education.

HOME ECONOMICS.

Nature and scope.—The regular four-year curriculum in home economics includes eight hours' work in practice teaching and sufficient elective work to allow students who are preparing to teach to carry additional courses in education sufficient to meet the requirements for the certificate "licentiate of instruction." The curriculum, with these included and physical training excluded, consists of technical home economics courses, 54 hours; science, 33 hours; cultural subjects, 18 hours; psychology, and education, 18 hours; elective, 5 hours; total, 128 hours.

The educational courses include psychology, 3 hours; history of education, 3 hours; the teaching process, 2 hours; observation and the curriculum, 2 hours; and practice teaching, 8 hours. The practice work consists in "daily teaching of home economics in the training school" throughout the year.

Requirements for registration.—Same as for agriculture.

Students.—Forty-five women are enrolled in 1916–17 for the professional courses. Eight graduated in 1916, all of whom are now engaged in teaching or supervision of home economics in the schools.

Instructors.—Same as for agriculture.

TRADES AND INDUSTRIES.

A special two-year manual training curriculum for teachers will be offered in 1917–18 for the first time. It includes technical manual arts, 32 hours; English, 6 hours; psychology and education, 24 hours. Eight hours will be devoted to practice teaching (one hour a day, actual time, throughout the year).

Two 1916 graduates of the regular engineering courses are engaged in teaching or supervising school work.

GENERAL REMARKS.

Certification.—The certificate of "licentiate of instruction" is granted by the University of Arkansas in accordance with the State school law, which reads:

"That the diploma from the teachers' training department of the University of Arkansas shall be equivalent to a teacher's professional license, which shall entitle the holder to teach in any public school in the State of Arkansas for a period of six years from and after the date of issue and at the expiration of said period such diploma may be converted into a life certificate, provided that the character of the work done by the holder thereof, and his or her moral character, shall meet with the approval of the State superintendent of public instruction of the State of Arkansas."

UNIVERSITY OF CALIFORNIA.

AGRICULTURE.

Nature and scope.—The college of agriculture offers a four-year curriculum with a major option in agricultural education. The work of the first two years is the same as for the other agricultural options. The work of the junior and senior years is largely elective, but students are expected to take, in addition to the courses in education, at least one course in each of the following divisions: Agronomy, pomology,

plant pathology, entomology, animal husbandry, dairy industry, poultry husbandry, and veterinary science. The work of the whole curriculum, with the above provisions, and excluding military and physical training, is distributed approximately as follows: Technical agriculture, 39 hours; science, 43 hours; cultural subjects, 8 hours; psychology and education, 13 hours; elective, 20 hours; total, 123 hours.

The educational courses are as follows: High school farms, gardens, and community work, 3 hours; general science and first year agriculture, 3 hours; agriculture in secondary schools, 3 hours; the practice of teaching agriculture, 4 hours. The practice teaching consists of "a five-weeks' practice course in selected high schools of the State where agriculture is taught, making of lesson plans, practice teaching, reports and conferences with supervising teacher and instructor."

Other professional courses are open for election and the institution offers graduate instruction leading to the master's degree and fulfilling the complete requirements for recommendation for certification.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work. A six-weeks' supervised practice course during the summer is required on the university farm.

Students.—Thirty-seven men and five women are registered in 1916–17 for the agricultural education option. Twenty students in this option graduated in 1916, thirteen of whom are now engaged in the teaching or supervision of agriculture in the schools.

Instructors.—One instructor provides the professional training in agricultural education.

HOME ECONOMICS.

Nature and scope.—In the college of letters and science two major options are offered in home economics, one in household art and the other in household science. A combination curriculum may be arranged upon request. The required work of the first two years, except for a few prerequisite courses, is the same as for other major options. The distribution of the work, exclusive of physical training, is about as follows: Technical home economics, 41 hours; science, 14 hours; cultural subjects, 41 hours; education, 12 hours; elective, 12 hours; total, 120 hours.

The educational courses include methods of teaching household art, 2 hours; methods of teaching household science, 2 hours; review of technique by practical problems, 1 hour; practice in teaching either household art or household science, 4 hours; and a professional course in education as a prerequisite, 3 hours. The practice-teaching course is described as follows: "The students are required to make lesson plans, which are criticized by the teacher and the instructor. The student then takes complete charge of the laboratory for a minimum of 4 hours a week for 15 weeks. She is supervised continuously by the resident teacher, and visited frequently by the instructor. This work is done in the high school and intermediate schools of San Francisco, Oakland, and Berkeley. This course satisfies the general practice-teaching requirements of the department of education, and is required of all candidates for the high-school teacher's certificate and for the special certificate in either household art or household science." Graduate work is also offered in both home economics and education.

Requirements for registration.—Fifteen units of high-school work and three years of collegiate work with major in home economics. Six weeks' supervised summer practice course is also required.

Students.—Forty-seven students are registered in 1916–17 for the training course in either household art or household science. Thirty-three graduated in 1916, of whom 23 are now engaged in teaching or supervision of home economics in the schools.

Instructors.—Two instructors provide the special instruction for the training of teachers of home economics.

TRADES AND INDUSTRIES.

No curriculum for the training of teachers in the trades and industries is now offered. The institution maintains a school of education, in which courses are open to seniors of the various colleges comprising the university.

GENERAL REMARKS.

Certification.—The California law provided that the State board of education shall prescribe general rules under which county and city boards of education may grant high-school teachers' certificates. The revised requirements briefly stated are as follows:

1. Each candidate shall have received a bachelor's degree from a standard college requiring not less than eight years of high-school and college training.
2. Each candidate shall have completed at least one year of graduate work in addition to the work required for the bachelor's degree. Such study shall pertain to at least one of the subjects in which the candidate seeks certification.
3. Each candidate shall have completed at least 15 semester hours of work in educational courses, including school management (1 hour), practice teaching (4 hours), teaching methods as applied to some special subject (maximum credit of 3 hours), and secondary education (2 hours). Candidates with at least one year's successful experience may be regarded as partially satisfying the requirement of practice teaching.

The university is authorized to recommend candidates for certification to the county and city boards of education.

COLORADO AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—The regular four-year curriculum in agriculture provides for considerable elective work, and students desiring to become teachers are expected to elect a minimum of 16 hours' work in education. The students preparing to teach select a major option in some agricultural department after the manner of regular students. The work of the first two years is alike for all options. The distribution of the work for the whole curriculum (agronomy option), exclusive of military training, is as follows: Technical agriculture, 49 hours; science, 57 hours; cultural subjects, 24 hours; psychology and education, 16 hours; elective, 8 hours; total, 154 hours.

The educational courses recommended to meet the requirements for State certification are: Psychology, 5 hours; history of education, 5 hours; classroom management and observation in teaching, 3 hours; and practice teaching in agriculture, 3 hours. Other courses are open for election. The practice work consists of from 3 to 5 hours a week for 12 weeks of actual teaching in the school of secondary agriculture maintained by the college.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work (80 per cent grade). No occupational experience is required.

Students.—Ten men and three women are registered in 1916–17 for the work in teacher training. Fifteen students graduated with this special training in 1916. Five of these are now engaged in the teaching or supervision of agriculture in the schools.

Instructors.—Three instructors provide the professional training in education.

HOME ECONOMICS.

Nature and scope.—Students preparing to teach may follow the curriculum in domestic science or domestic art and elect the necessary professional courses in education to meet the requirements for State certification. The first two years' work in these two curricula is uniform and embraces work in both domestic science and domestic art. The work of the whole curriculum, exclusive of physical training, is

as follows: Technical home economics, 34 hours; science, 46 hours; cultural subjects, 45 hours; psychology and education, 16 hours; elective, 13 hours; total, 154 hours.

The educational courses are the same as listed under agriculture, except that the observation and practice work pertains to home economics. The practice teaching is performed in the secondary school of domestic science and is the same in extent as for agriculture.

Requirements for registration.—Same as for agriculture.

Students.—Fifty women are registered in 1916–17 for professional training in education in connection with the two curricula in home economics. Thirty graduated in 1916, of whom 20 are now engaged in teaching or supervising home economics.

Instructors.—Five instructors provide the professional training in education for students of the home economics curricula.

TRADES AND INDUSTRIES.

Nature and scope.—The teacher-training curriculum in mechanic arts, like those in agriculture and home economics, is a modification of the regular four-year curriculum leading to the bachelor's degree. The opportunity for election during the junior and senior years makes it possible to include the required amount of professional work in education to qualify for the State teacher's certificate. The required subjects in the mechanical engineering curriculum embrace a few that are not necessary in a manual arts curriculum for teachers. Provision probably may be made to substitute other courses for these. The complete curriculum, including professional courses in education and excluding military drill, embraces the following: Technical manual arts, 77 hours; science, 20 hours; cultural subjects, 30 hours; psychology and education, 16 hours; elective, 11 hours; total, 154 hours.

The professional courses in education are the same as for agriculture, except that the observation and practice work pertains to manual arts, and is provided by the secondary school of mechanic arts.

Requirements for registration.—Same as for agriculture.

Students.—Five men are registered in 1916–17 for teacher training in mechanic arts. Two were graduated in 1916, both of whom are now engaged in teaching or supervision of industrial work in the schools.

Instructors.—Two instructors provide the professional training in connection with the mechanic arts curriculum.

GENERAL REMARKS.

Certification.—The instruction provided by the college in training teachers satisfies the State certification law which requires "professional training equivalent to at least one-sixth of a standard four years' college course in at least three of the following groups of subjects, one of which shall be practice teaching, to wit:

"1. General educational psychology.
"2. History of education.
"3. Science and principles of education.
"4. Practice teaching and special methods.
"5. Organization and management of schools.
"6. Philosophy, sociology, and anthropology.

"State diplomas granted under the provisions of this act entitle the holders thereof to teach in the public schools of any county, city, town or district in the State without the necessity of any other examination for the period of five years, unless sooner revoked by the State board of education."

The diplomas may be renewed at the end of five years, and later may be made a life certificate.

CONNECTICUT AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—In 1916–17 a teacher-training curriculum is being offered for the first time. Students preparing to teach agriculture follow the regular four-year curriculum, electing a major option at the beginning of the junior year. Each option affords enough elective credit to enable students to carry 12 credit hours in education. With such courses included, the distribution of work in the horticulture option, exclusive of military and physical training, is as follows: Technical agriculture, 52 hours; science, 47 hours; cultural subjects, 37 hours; education, 12 hours; elective, 1 hour; total, 149 hours.

The educational courses include educational psychology, 3 hours; philosophy of education, 3 hours; principles of teaching, 3 hours; teaching of agriculture, 3 hours. Practice teaching forms a part of the last-named course. The practice work is afforded by the "school of agriculture," which offers secondary instruction in agriculture.

Requirements for registration.—Four years of high-school work and three years of collegiate work. Three months of practical farm experience.

Students.—Twenty-four students are registered in 1916–17 for professional educational work. Since this is the first year that this curriculum has been offered, no students have graduated. Two of the 1916 graduates in the regular curriculum are now engaged in teaching agriculture in the schools.

Instructors.—One instructor provides the professional training in agricultural education.

HOME ECONOMICS.

Nature and scope.—Teacher training in home economics also is being offered this year for the first time. The regular four-year curriculum, which comprises both domestic science and domestic art, includes 14 hours in education. The distribution of the work, exclusive of physical training, is as follows: Technical home economics (including 19½ hours in agricultural courses), 55 hours; science, 48½ hours; cultural subjects, 31 hours; education, 14 hours; elective, 11 hours; total, 159½ hours.

The educational courses include philosophy of education, 3 hours; principles of teaching, 3 hours; teaching home economics, 8 hours. The last-named course includes practice teaching in the "school of home economics," which includes work of a secondary grade.

Requirements for registration.—Four years of high-school work and two years of collegiate work.

Students.—Since the four-year curriculum in home economics has been introduced just recently, no students have reached the junior year, when they would be eligible for registration for the work in teacher-training.

Instructors.—Two instructors will provide the professional training for the training of teachers in home economics.

TRADES AND INDUSTRIES.

No special provision has been made for the training of teachers in manual arts, but students in the regular mechanic-arts curriculum may elect nine hours' work in education. No course in special methods, however, is provided.

GENERAL REMARKS.

Certification.—No definite cooperative relations in regard to the certification of teachers exist between the State board of education and the college. Teachers are engaged by the local communities upon the recommendation of the college.

DELAWARE COLLEGE.

GENERAL REMARKS.

No special training curricula in either agriculture, home economics, or trades and industries are offered. Plans are being made to offer an agricultural teacher-training curriculum during the summer session.

Certification.—Under the rules of the State board of education certificates are issued, without examination, to graduates of colleges on an approved list.

UNIVERSITY OF FLORIDA.

AGRICULTURE.

Nature and scope.—The college of agriculture, in cooperation with teachers' college; offers a major option in agricultural education. The work of the first two years is the same as in other agricultural options. The work of the whole curriculum, exclusive of military training, is distributed about as follows: Technical agriculture, 34 hours; science, 31 hours; cultural subjects, 17 hours; psychology and education, 24 hours; elective, 22 hours; total, 128 hours.

The educational courses available include methods of teaching agriculture, 1 hour; extension teaching, 2 hours; psychology, 3 hours; general methods, 3 hours; history of education, 3 hours; secondary education, 3 hours; principles and philosophy of education, 3 hours; child study, 3 hours; practice teaching, 3 hours. The practice high school, which forms a part of teachers' college, offers facilities for practice teaching.

The teachers' college also offers a four-year curriculum for the training of teachers in agriculture and leading to the degree of bachelor of science in education. This curriculum provides instruction in academic and educational courses and, during the second, third, and fourth years, provides for elective work in agriculture or other special subjects in which teaching preparation may be desired. The content of the curriculum is about the same as described above, except that at least three hours' work in a foreign language is required.

Requirements for registration (agriculture) curriculum.—Sixteen units of high-school work and two years of collegiate work.

Students.—Only one student is registered in 1916–17 for the agricultural-education option. None graduated in 1916. No information was supplied with regard to the number of students graduated or registered in the agricultural option of the educational curriculum.

Instructors.—Four instructors provide the professional training in education.

HOME ECONOMICS.

The institution offers no curriculum in home economics.

TRADES AND INDUSTRIES.

Although the institution does not claim to offer a special curriculum for the training of teachers in trades and industries, an opportunity is offered in the four-year curriculum in education to elect manual-arts courses, many of which are available and well suited to the purpose.

GENERAL REMARKS.

Certification.—"Graduates of teacher college are granted State certificates without further examination—provided that one-fifth of their work has been devoted to professional training; and provided further, that during each of the last two years of their course they make a general average of 85 in all subjects and do not fall below 75 in any subject. These State certificates are converted into life certificates in the usual way."

UNIVERSITY OF GEORGIA AND GEORGIA STATE COLLEGE OF AGRICULTURE.

AGRICULTURE.

Nature and scope.—The regular four-year curriculum leading to the bachelor's degree provides for sufficient elective work to enable students who are preparing to teach to carry the necessary professional courses in education to qualify for the teachers' professional license. The educational courses are given in the Peabody School of Education. Students preparing to teach carry the same required work as other agricultural students. At the beginning of the junior year they are required to select a major option consisting of 24 hours' work in a single department and two minor options of 12 hours each from restricted groups of subjects. The remaining 24 hours are for free elective courses, assuming that the elective work is taken in education. The complete curriculum comprises the following: Technical agriculture, 60 hours; science, 42 hours; cultural subjects, 24 hours; psychology and education, 24 hours; total, 150 hours.

The professional courses necessary to meet the requirements for certification are: Elementary psychology, 4 hours; educational psychology, 2 hours; history of education, 6 hours; principles of rural life and education, 4 hours; the teaching of agriculture, 2 hours; philosophy of education, 3 hours; administration of education in a democracy, 3 hours. The two courses in psychology are prerequisite to the courses in education. Provision is made for observation and teaching in the high school of Athens, with visits to other high schools of the State.

Requirements for registration.—Fourteen units of high-school work and two years of collegiate work.

Students.—Thirty men are registered in 1916-17 for the agricultural teacher-training curriculum. Six students who carried courses in education graduated in 1916. All of these are now engaged in teaching or supervision of agriculture in the schools.

Instructors.—Five instructors provide the professional training in education.

GENERAL REMARKS.

The institution offers no curricula pertaining to either home economics or trades and industries.

Certification.—"A graduate of an approved (14-unit) college who has included in his college courses three courses in education of three hours each throughout a college year or the equivalent (18 semester hours) will be eligible for a professional license good for three years in any grade of educational work and renewable thereafter indefinitely, the renewal based on successful experience and an examination on the State reading course for the year."

UNIVERSITY OF IDAHO.

AGRICULTURE.

Nature and scope.—Students preparing to teach may take the regular four-year curriculum leading to the bachelor's degree and elect the necessary work (16 hours) in education to meet the requirements for certification. Four major options are available in the four-year curriculum, specialization commencing with the junior year. The distribution of the work, in the farm-crops option, exclusive of military training, is as follows: Technical agriculture, 59 hours; science, 43 hours; cultural subjects, 10 hours; psychology and education, 16 hours; elective, 6 hours; total, 134 hours.

Many educational courses are available, but the following are usually recommended: Social and moral education, 3 hours; history of modern education, 3 hours; principles of teaching, 3 hours; schoolroom management, 2 hours; methods

of teaching agriculture, 3 hours; observation and teaching, 2 hours. Observation and practice teaching consists of one semester's work in the local public schools.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work. At least one summer's work on an approved farm required for graduation.

Students.—Ten men are registered in 1916–17 for the professional work in education in connection with the agricultural curriculum. Six students with professional instruction graduated in 1916, all of whom are now engaged in the teaching or supervision of agriculture in the schools. Two 1916 agricultural graduates without professional training are also engaged in teaching or supervisory work.

Instructors.—Three instructors provide the professional training in education.

HOME ECONOMICS.

Nature and scope.—The regular four-year curriculum in home economics affords opportunity for students preparing to teach to carry as electives the professional courses in education necessary for certification. The work in such a schedule, excluding physical training, would consist of technical home economics, 37 hours; science, 27 hours; cultural subjects, 24 hours; education, 16 hours; elective, 20 hours; total, 124 hours.

The educational courses are the same as listed under agriculture, except that the courses in methods and practice teaching relate to home economics.

Requirements for registration.—Fifteen units of high-school work and three years of collegiate work.

Students.—Five women are registered in 1916–17 for the professional courses in education. Five were graduated with professional training in 1916, all of whom are now engaged in teaching or supervision.

Instructors.—Three instructors provide the professional training in education to students in home economics.

TRADES AND INDUSTRIES.

No curriculum for the training of teachers in the trades and industries is offered at the present time.

GENERAL REMARKS.

Certification.—"No one may legally teach in the schools of Idaho without a proper certificate. Students who complete the curriculum in education, on recommendation of the faculty of the university, receive from the State board of education a State certificate, which authorizes the holder to teach in any of the schools of the State.

"A student who has completed two or more years of university work, including 10 credits in the department of education, may be recommended to the State board of education for a provisional teacher's certificate, which is good for two years.

"The State board may issue specialists' State certificates to teachers of special subjects, as manual training, etc., but an applicant must have completed at least a two-year course in his specialty and must have academic preparation equal or superior to graduation from an approved high school."

UNIVERSITY OF ILLINOIS.

AGRICULTURE.

Nature and scope.—The regular four-year curriculum permits of elective work sufficient to carry the necessary work in education to meet the requirements for certification. The institution, however, recommends groups of courses from which a satisfactory schedule may be prepared. In either case the distribution of the work, exclusive of military and physical training, is about as follows: Technical agriculture, 59 hours; science, 32 hours; cultural subjects, 20 hours; education, 12 hours; total,

123 hours. The regular four-year curriculum requires 59 hours in agriculture, 50 in nonagriculture, and 14 free elective. It may be seen, therefore, that the amount of work in science may be increased at the expense of cultural subjects.

The educational courses required for recommendation for county certification are: Introduction to education, 4 hours; principles of high-school education, 3 hours; principles and methods of high-school agriculture, 5 hours. Many other education courses, including history of education, vocational education, principles of education, educational psychology, and educational administration, are available. Practice teaching is not required, but is available "through cooperation with the local high school."

Requirements for registration.—Fifteen units of high-school work and at least two years of collegiate work.

Students.—Thirty men and two women are registered in 1916–17 for the professional training courses. Thirty-seven students, with professional training, were graduated in 1916. Twenty-six of these are now engaged in the teaching or supervision of agriculture in the schools. Eight regular 1916 graduates in agriculture are also engaged in such work.

Instructors.—At least two instructors contribute to the professional training of agricultural teachers.

HOME ECONOMICS.

The regular four-year curriculum in home economics requires in addition to physical training 29 hours of technical home economics (including art and design); 30 hours of science; 31 hours of cultural subjects; and 37 hours of elective work. Abundant opportunity, therefore, is offered for professional training in education. The institution presents a suggested curriculum including the following: Technical home economics (including art and design), 38 hours; science, 25 hours; cultural subjects, 38 hours; education, 10 hours; elective, 16 hours; total, 127 hours.

The institution's educational courses include introduction to education, 4 hours; technique of teaching, 3 hours; teachers' course in home economics, 3 hours. Practice teaching is not required, but is available "through cooperation with the local high school."

Requirements for registration.—Fifteen units of high-school work and three years of collegiate work.

Students.—Seventy-eight women are registered for professional training in 1916–17. Thirty-six students with professional training graduated in 1916. Thirty of these are now engaged either in teaching or supervision.

Instructors.—Three instructors provide the professional training for home economics students.

TRADES AND INDUSTRIES.

The institution offers no curriculum for the training of teachers in trades and industries except during the summer session when several manual training courses are offered, including industrial education, 2½ hours; woodworking, 3 hours; drafting, 4 hours; descriptive geometry, 4 hours; pattern shop, 3 hours; art metal work, 2½ hours; jewelry, 2½ hours.

GENERAL REMARKS.

Certification.—The university committee on appointment of teachers recommends qualified graduates for positions as teachers or supervisors in public schools and technical schools in response to requests from school authorities. The requirements for recommendation, briefly stated, are (*a*) an average grade of 85 per cent in the courses constituting the major subject or the principal subject which the candidate wishes to teach; (*b*) the satisfactory completion of the following educational courses: Introduction to education, 4 hours; observation and technics of teaching, 3 hours.

County high-school certificates are granted upon examination by county superintendents and State high-school certificates upon examination by the State superintendent. The new certification law provides for certification without examination as here stated: "At the option of the county superintendent, a high-school certificate may be issued without examination to graduates of a recognized normal school, college, or university who present within three years after graduation certified credits in English, pedagogy, and six high-school subjects (chosen from a list published by the examining board) and accompanied by faculty recommendations of ability to teach in the school." (Section 6.)

PURDUE UNIVERSITY.

AGRICULTURE.

Nature and scope.—Agricultural education constitutes one of the major options of the regular four-year agricultural curriculum leading to the bachelor's degree. Except for one course the work of the first two years is alike for all major options. The distribution of the work, exclusive of military drill, is as follows: Technical agriculture, 77 hours; science, 42 hours; cultural subjects, 24 hours; psychology and education, 20 hours; total, 163 hours.

The educational courses include general and educational psychology, 6 hours; history and principles of education, 3 hours; principles and methods of teaching, 3 hours, and additional observation assignments; school organization and school management, 3 hours. The last-mentioned course includes special methods in agriculture with practice teaching. "The practice teaching consists of two hours' actual teaching experience per week for eight weeks, each semester, making a total of 32 hours teaching time. Each student has complete charge of his class and is responsible to the superintendent of the local schools and to the supervisor in charge." Among the science courses is one in entomology, especially adapted for teachers.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Thirty-five men are registered in 1916–17 for the agricultural education option. Eighteen graduated from this option in 1916. Twelve of these are now engaged in teaching or supervisory work. Two graduates from other options are also engaged in school work.

Instructors.—Three instructors provide the professional training in education.

HOME ECONOMICS.

Nature and scope.—Students preparing to teach take the home economics option of the general science curriculum. This option includes the necessary professional courses to meet the requirements of certification. The distribution of the work, exclusive of physical training, is as follows: Technical home economics, including drawing, 40 hours; science, 30 hours; cultural subjects, 66 hours; psychology and education, 20 hours; total, 156 hours.

The professional training is the same as indicated under agriculture, except that the work in methods, observation, and practice relate to home economics.

Requirements for registration.—Fifteen units of high-school work and at least one year of collegiate work.

Students.—For the home economics option, including education, 151 students are registered in 1916–17; 27 graduated in 1916; 20 of these are now engaged in the teaching or supervision of school work.

Instructors.—Four instructors provide the professional training for home economics teachers.

TRADES AND INDUSTRIES.

No curriculum is offered for the preparation of teachers in trades and industries, except during the summer session. Students in the general science curriculum may select the teacher-training option and elect courses in practical mechanics.

GENERAL REMARKS.

Certification.—"The work of the department of education has been regularly approved by the State board of education, and Purdue University has been accredited as a standard college for the preparation of teachers in accordance with the Indiana school law of 1907."

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

AGRICULTURE.

Nature and scope.—The regular four-year curriculum in agriculture, leading to the bachelor's degree, offers a major option in agricultural education. The work of the first year is the same as for other options. The curriculum embraces the following: Technical agriculture, 40 hours; science, 30 hours; cultural subjects, 20 hours; psychology and education, 20 hours; elective, 30 hours; total, 140 hours. "Of the elective work it is customary to require about 20 hours in agriculture."

The professional courses required are: Psychology, 3 hours; educational psychology, 3 hours; methods of teaching (technique of recitation), 2 hours; principles of education, 2 hours; special methods of teaching agriculture and practice teaching, 6 hours. The remaining four hours' work may be selected from the other listed courses in education, such as educational history, 2 or 4 hours; development of the industrial high school, 2 hours; the present-day high school, 2 hours; school administration and supervision, 2 or 4 hours. "Each student must teach at least 36 lessons, equaling one lesson per week throughout the year. As a matter of fact, however, the lessons are taught consecutively for two or three weeks at different times during the year. All teaching is under careful supervision and direction. It is preceded by a definite plan and followed by criticisms."

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work. Six months of practical farm experience is required for graduation.

Students.—Twenty men are registered in 1916–17 for the agricultural education option. Eleven graduated from this option in 1916. All of these are now engaged in school work. Two 1916 graduates from other options are also engaged in school work.

Instructors.—Three instructors provide the professional training for agricultural teachers. "All have had extended public-school experience and special training."

HOME ECONOMICS.

Nature and scope.—The teachers' curriculum in home economics follows the same general plan as that in agriculture, including technical home economics, 40 hours; science, 40 hours; cultural subjects, 20 hours; psychology and education, 20 hours; elective, 20 hours; total, 140 hours.

"The general plan of the work in education is the same as described for agriculture. The amount of practice teaching is just a little less this year because of limited facilities. We hope to bring the practice teaching up, however, to a minimum of 36 actual periods."

Requirements for registration.—Fifteen high-school units and one year of collegiate work.

Students.—One hundred home economics students are registered in 1916–17 for the professional work in education. Seventy-five graduated with professional training in 1916. Sixty-seven of these are now engaged in school work.

Instructors.—Six instructors provide the professional training for home economics teachers. "All have had public school experience and special training."

TRADES AND INDUSTRIES.

The teacher training curriculum for trades and industries is just in the process of development, so that a definite statement concerning its scope can not be given at the present time.

"We are planning now to have evening schools established in three or four different points in the State, naturally in the larger industrial centers. At these points training will be given in the following subjects: Trade mathematics, trade drawing, English, civics, industrial education, practice teaching, and class management, and possibly physiology and hygiene. Men admitted to these courses will be experienced tradesmen who desire to teach."

GENERAL REMARKS.

"Two new teacher courses will appear in the 1917–18 catalogue: (1) A course in agriculture and manual training, and (2) a course in home economics and agriculture. These will be helpful in preparing for consolidated schools and for the smaller towns."

Certification.—"In accordance with the law passed by the thirty-first general assembly, the State board of educational examiners will grant five-year first-grade State certificates to graduates of the Iowa State College who have completed the following work:

1. "Psychology, 6 semester hours.
2. "Education, 14 semester hours.
   (a) "Principles and science of education. Limited to 8 semester hours.
   (b) "History of education. Limited to 8 semester hours.
   (c) "General and special methods of teaching. Limited to 4 semester hours. Two hours of general methods must be taken in the department of education.
   (d) "Electives, subject to the approval of the department of agricultural education.

"The first-grade certificate is subject to renewal and life validation."

KANSAS STATE AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—This institution has recently modified its curricula and changed from the three-term plan to the semester basis. "By the selection of proper electives in the department of education, the four-year curriculum in agriculture may not only lead to the degree of bachelor of science in agriculture, but at the same time qualify the student for the three-year Kansas State teacher's certificate, renewable for life and valid in any high school or any public school in the State. A student desiring to qualify for teaching should begin his professional preparation by electing psychology, first semester, junior year. A total of 18 semester credits in the department of education is required for this certificate." The distribution of the work, with education included, is as follows: Technical agriculture, 55 hours; science, 43 hours; cultural subjects (social science), 12 hours; psychology and education, 18 hours; elective, 4 hours; total, 132 hours.

The required work in education includes the following three-hour courses: Psychology, educational psychology, history of education, educational administration, agricultural education, and practice teaching. In the practice teaching course "approved students are put in charge of regular classes in the 'school of agriculture.' The work is supervised by a member of the department of education and by the regular class teacher. Both teachers criticize lesson plans and presentation. Students do practice teaching in the subjects which they expect to teach as far as circumstances permit."

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work. Six months' approved farm experience required for graduation.

Students.—Forty men are registered in 1916 for special training in agricultural education. Twenty graduated with State certificates in 1916. All of these are now engaged in teaching or supervising. Seventeen of the 1916 graduates from the regular curriculum are also engaged in school work.

Instructors.—Three instructors provide the special training for agricultural teachers.

HOME ECONOMICS.

Nature and scope.—The regular four-year curriculum, which combines household art and household science, provides for sufficient elective work to include all the educational work required for the State teacher's certificate. The distribution of the work, exclusive of physical training, is as follows: Technical home economics (including art design, drawing, gardening, etc.), 40 hours; science, 33 hours; cultural subjects, 34 hours; psychology and education, 18 hours; elective, 9 hours; total, 134 hours.

The educational courses include psychology, 3 hours; educational psychology, 3 hours; history of education, 3 hours; educational administration, 3 hours; home economics education, 2 hours; methods in teaching home economics, 2 hours; observation and practice teaching, 2 hours. The course in methods "discusses the place of home economics in modern education and the aims and phases of work in the various types of schools. The organization, maintenance, equipment, and supervision of such departments are also treated."

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—For the educational work in home economics 185 women are registered. The graduates with certificates in 1916 numbered 101; 70 of these are now engaged in teaching or supervising school work.

Instructors.—Four instructors provide the professional training for home economics teachers.

TRADES AND INDUSTRIES.

No separate curriculum is offered for the training of teachers in trades and industries, "but 18 hours of education provide prospective teachers with valid certificates for use in this field."

GENERAL REMARKS.

Certification.—"A minimum of 27 credit hours (18 semester hours) is required in this department (education) for the State teacher's certificate."

STATE UNIVERSITY OF KENTUCKY.

AGRICULTURE.

Nature and scope.—The regular four-year curriculum leading to the bachelor's degree permits of sufficient elective work to carry the educational courses necessary to qualify for the State teacher's certificate. Beginning with the junior year, candidates are expected to specialize in a major subject. A large part of the work during the last two years is elective. Assuming that a student specializes in agronomy and carries the required work for a major in that subject and that in addition he elects the necessary amount of work in education to meet the requirements for certification, the distribution of the work of the whole curriculum, exclusive of military and physical training, is about as follows: Technical agriculture, 61 hours; science, 40 hours; cultural subjects, 13 hours; education, 16 hours; total, 130 hours.

The more important educational courses available are: Agricultural education, 8 hours; administration and supervision of rural education, 3 hours; psychology, 6 hours; educational psychology, 3 hours; methods and aims of study, 3 hours; prin-

ciples of education, 3 hours; technique of teaching, 3 hours; history of education, 3 or 6 hours; and principles of secondary education, 3 hours. The course in technique includes "a discussing of method with observation and practice teaching." The course in agricultural education consists of "lectures, assigned reading, reports, and discussions on the principles underlying the organization and teaching of agriculture in elementary and high schools."

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Seven men are registered in 1916–17 for the special work in agricultural education. One graduated in 1916. Four of the 1916 graduates without special training are now engaged in teaching or supervising.

Instructors.—At least two instructors provide the professional training for agricultural teachers.

HOME ECONOMICS.

Nature and scope.—Two four-year curricula leading to the bachelor's degree are offered. One of these offers major work in food and nutrition and the other in textiles and clothing. Either one includes enough work in psychology and education to meet the requirements for certification. The distribution of the work of the whole curriculum, exclusive of physical training, is as follows: Technical home economics, 51 hours; science, 32 hours; cultural subjects, 24 hours; education, 16 hours; elective, 11 hours; total, 134 hours.

The required educational courses are: Psychology, 6 hours; principles of education, 3 hours; technique of teaching (practice), 3 hours; methods of teaching home economics, 4 hours. The practice work is described as follows: "Students required to teach one afternoon a week in senior year. A course of study and lesson plans must be submitted as frequently as possible. Home economics teachers observe the students; reports are sent in by officials of the school; and the home economics college keeps in touch with the student's teaching. The classes taught are in high schools in near-by towns, in county high schools, two-room rural schools, high schools and elementary schools of Lexington. Observations one day a week in local or near-by schools are made and reported on."

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Seven women are registered in 1916–17. No students graduated with professional training in 1916.

Instructors.—Three instructors provide the special training for home economics teachers.

TRADES AND INDUSTRIES.

No curriculum is offered for the training of teachers in trades and industries.

GENERAL REMARKS.

Certification.—A bachelor's degree in education, "with the approval of the State superintendent of public instruction, entitles the holder to teach in any of the common schools and high schools of the Commonwealth without further examination during life or good behavior."

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE.

AGRICULTURE.

Nature and scope.—The college of agriculture, through cooperation with the teachers college, offers a teachers' course in agriculture. The distribution of the work is as follows: Technical agriculture, 43 hours; science, 32 hours; cultural subjects, 12 hours; psychology and education, 18 hours; elective, 31 hours; total, 136 hours.

The prescribed educational courses are as follows: Educational psychology, 6 hours; history of education, 3 hours; secondary education, 6 hours; practice teaching, 3 hours. There is no course in methods of teaching agriculture, except a three-hour course in the elements of horticulture for teachers. This pertains especially to nature study and school gardening. The university maintains a demonstration high school where opportunity is afforded for practice teaching and observation.

Requirements for registration.—Fourteen high-school units and two years of collegiate work.

Students.—"It is seldom that a student registers in this course. The average boy, no matter from where he may come, on entering college has no more idea of teaching than of sprouting wings. The reason is plain—a teacher may work always and never get a salary worth while. The field does not promise enough. A number of graduates fall into teaching because at the time it offers a little more ready money than anything else in sight. It is seldom that the work is selected as a life career." Nine 1916 graduates from the regular four-year college course are now engaged in teaching agriculture.

Instructors.—Two instructors provide the special training in education.

HOME ECONOMICS.

Nature and scope.—Students preparing to teach may elect home economics as their special subject in the arts and science curriculum and elect sufficient work in education to meet the requirements for recommendation by teachers college. The distribution of the work of such a curriculum is about as follows: Technical home economics, 30 hours; science, 24 hours; cultural subjects, 36 hours; psychology and education, 20 hours; elective, 36 hours, total 136 hours.

The prescribed educational courses are as follows: Educational psychology, 6 hours; history of modern education, 3 hours; secondary education, 6 hours; practice teaching, 3 hours; methods of teaching home economics, 2 hours. Practice teaching is provided by the demonstration high school which is maintained for the purpose.

Requirements for registration.—Fourteen units of high-school work and two years of collegiate work.

Students.—The home economics department has just been established, and no students have yet registered for teacher training work.

Instructors.—At least three instructors will provide the instruction in educational courses.

TRADES AND INDUSTRIES.

No teacher training curriculum is offered in trades and industries.

GENERAL REMARKS.

Certification.—Diplomas conferred upon graduates of the department of philosophy and education of the Louisiana State University and Agricultural and Mechanical College shall entitle the holders to a first-class certificate valid anywhere in the State for a period of four years, and it is renewable.

UNIVERSITY OF MAINE.

AGRICULTURE.

Nature and scope.—Students in the regular four-year agricultural curriculum, at the beginning of the junior year, are required to elect a major option in one of the main branches of agriculture. In each option considerable opportunity is given for election and students preparing to teach are expected to elect educational courses. "If necessary, required courses in the general major are dropped to accommodate students taking educational courses." Assuming that the same amount of psychology and education is required for special agricultural teachers as is required for secondary

teachers in general, the distribution of the work (in the agronomy option) is about as follows: Technical agriculture, 51 hours; science, 52 hours; cultural subjects, 20 hours; psychology and education, 19 hours; elective, 4 hours; total, 146 hours.

The educational courses necessary to secure the professional secondary certificate are the following: Psychology, 6 hours; history of education, 3 hours; secondary education, 3 hours; technique of teaching, 3 hours; methods of teaching agriculture, 2 hours; practice teaching, 2 hours. The work in practice teaching covers three hours' actual time per week for one-half year, making a total of 54 hours. The work is done in the local high school and is under the direction of both the department of education and the agricultural department concerned.

Requirements for registration.—Fourteen and one-half units of high-school work and two years of collegiate work. Students who are not proficient in practical farm operations are required to spend at least one summer vacation on an approved farm.

Students.—Five men and one woman are registered for professional training in agricultural education. Three men graduated in this work in 1916, all of whom are now engaged in teaching or supervision of school work in agriculture. Eight of the regular 1916 graduates are also engaged in teaching agriculture.

Instructors.—At least two instructors provide the professional training for agricultural teachers.

HOME ECONOMICS.

Nature and scope.—There is but one prescribed four-year curriculum in home economics. All students, therefore, take the same schedule in which there is opportunity for elective work to the extent of 18 hours. A six-hour course in psychology is included in the prescribed work. The distribution of the work of the whole curriculum is about as follows: Technical home economics, 47 hours; science, 39 hours; cultural subjects, 39 hours; psychology and education, 15 hours; elective, 6 hours; total, 146 hours. To qualify for the teacher's certificate 5 hours' additional work in education is necessary. The educational courses are about the same as for agriculture, except that methods of teaching home economics is substituted for methods of teaching agriculture. The practice teaching is under the direction of the department of home economics in cooperation with the department of education.

Requirements for registration.—Same as for agriculture.

Students.—In 1916–17 sixty-five women are registered for special educational work in connection with the home economics curriculum. Three students graduated in 1916, all of whom are now teaching home economics.

Instructors.—Two instructors provide the special instruction for the training of teachers in home economics.

TRADES AND INDUSTRIES.

No teacher-training curriculum is offered for the preparation of teachers in trades and industries.

GENERAL REMARKS.

Certification.—"The college of arts and sciences of the University of Maine has arranged a program for the professional training of secondary school-teachers which will entitle those who complete it to a professional State certificate for secondary school-teachers. The program has been arranged in conference with the State superintendent of public schools and has his indorsement.

"In addition to fulfilling the general requirements leading to the degree of bachelor of arts, the student is required to complete 6 hours in psychology in the sophomore year as a prerequisite to 12 hours' work in education in the junior and senior years, 30 hours in a major subject, and from 10 to 20 hours in a minor subject. The prescribed work in education includes three hours in the history of education, 3 hours in the principles of secondary education, 3 hours in technique of teaching, and 3 hours to be

elected from the three following subjects: Adolescence, pedagogy and psychology of high-school subjects, and practice teaching.

"For the completion of this course a high standard of scholarship is required. All the prescribed work must be of 'C' grade or above. Upon completing this course the student will receive a professional secondary certificate from the State department of public instruction which will designate the major and minor subjects which he has pursued. A special certificate will also be issued by the university which will give a detailed outline of the student's record."

"No special arrangement has yet been made with the department of education concerning teacher training in the college of agriculture. Negotiations are, however, under way and we hope to arrive at a satisfactory understanding. The program outlined for students in the college of arts and sciences in work including education and philosophy would be an impossible one for students in the college of agriculture, chiefly because of a lack of time."

MARYLAND STATE COLLEGE OF AGRICULTURE.

AGRICULTURE.

Nature and scope.—This institution offers as one of the major options in agriculture a four-year curriculum in agricultural education leading to the B. S. degree. The first two years' work is the same as that of the other agricultural options. The distribution of the work of the whole curriculum, exclusive of military training, is as follows: Technical agriculture, 72 hours; science, 51½ hours; cultural subjects, 58½ hours; psychology and education, 18 hours; total, 200 hours. The work is largely prescribed.

The educational courses include psychology, 3½ hours; history of education, 2½ hours; principles of education, 2½ hours; secondary school agriculture, 2½ hours; organization and materials, 2½ hours; rural organization, 2½ hours; research and thesis, 1½ hours. The course in secondary school agriculture "involves a study of the recitation in its parts, the methods of conducting and the function of laboratory, shop, and field exercises, and the correlation of these with other subjects." Practice teaching is conducted in connection with the two-year secondary curriculum in agriculture.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work. Eight weeks of actual farm work on approved farms is a requirement for graduation.

Students.—Seventeen students are registered in 1916–17 for teacher training in agriculture. Three graduated with professional training in 1916. Two of these are now engaged in teaching.

Instructors.—Two instructors provide the instruction in education.

HOME ECONOMICS.

The institution offers no curriculum in home economics, except in the summer school.

TRADES AND INDUSTRIES.

Nature and scope.—A special four-year curriculum leading to the B. S. degree is offered for the training of teachers in mechanic arts and is known as the "engineering education course." The work of the first two years is very similar to that of the other engineering courses. The distribution of the work of the whole curriculum, exclusive of military training, is as follows: Technical manual arts, 88 hours; science, 20 hours; cultural subjects, 78 hours; psychology and education, 14 hours; total, 200 hours. The work is largely prescribed.

The educational courses are the same as listed under agriculture, except that the course in rural organization is not required and that the subject matter in the secondary school course pertains chiefly to manual training.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—One student is registered in 1916–17 for teacher training in manual arts.

Instructors.—Two instructors provide the special instruction in education.

GENERAL REMARKS.

Certification.—"Any graduate of a department of pedagogy of any reputable college or university, approved by the State board of education, shall be entitled to teach in public elementary or high school without examination."

MASSACHUSETTS AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—Agricultural education is one of the major options in the four-year curriculum. In general, it must be elected at or before the close of the sophomore year. During the junior year the work in education and agricultural science is under the immediate and rather strict control of the major adviser. During the senior year more latitude is allowed the individual students who may be looking forward to teaching different aspects of agriculture or agricultural science. Aside from military drill and physical training, 58 credit hours are required in the freshman and sophomore years. A schedule embracing 30 credit hours is presented for juniors and seniors under a rather strict supervision by the major adviser. Since the total requirement for graduation is 136⅔ [1] credit hours, there remains 48⅔ credit hours for rather free election on the part of individual students. A student majoring in agricultural education is required to take one or two courses in as many departments of agricultural science as his schedule will permit. He is also advised to specialize in some one department in so far as the schedule will permit. The normal distribution of the work of the whole curriculum for students electing agricultural education as major would be about as follows: Technical agriculture, 50⅔ credit hours; general science, 39⅓ credit hours; purely cultural subjects, 33⅓ credit hours; professional subjects in the department of agricultural education, 13⅓ credit hours.

The courses in agricultural education include educational psychology; history and theory of education; principles and methods of teaching, with special emphasis upon the teaching of agriculture. With regard to practice teaching, the following statement is copied from the special report received: "We are just introducing a systematic scheme of practice-teaching. A little practice-teaching has been done by a few of our students in the past, but no requirement has been made. This year we are endeavoring to systematize it and get it on a basis of a term's work for credit. We hope in the near future to make it a prerequisite for recommendation for the State teacher's certificate in State-aided high schools. At present we are working in cooperation with two near-by schools in which four different students are now serving as apprentices. We hope to extend this until we shall be able to take care of a goodly number of our students who are looking forward to teaching as a business."

Requirements for registration.—Fourteen units of high-school work and two years of collegiate work.

Students.—Twenty-nine men and three women are enrolled in 1916–17 for the agricultural education option. Eleven graduated in 1916, of whom eight are now teaching. Four 1916 graduates from other options are also engaged in teaching.

Instructors.—One instructor furnishes the special professional instruction in agricultural education.

[1] Since the college requirements for graduation are based upon term hours, and since they have been reduced to semester hour equivalents, fractions are unavoidable.

GENERAL REMARKS.

No curricula are offered in either home economics or mechanic arts. Therefore, no attempt has been made to prepare teachers in these subjects.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

"The courses of study offered by the Massachusetts Institute of Technology do not prepare instructors for the teaching of agriculture, home economics, or trades and industries."

MICHIGAN AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—Students preparing to teach agriculture take one of the regular major options of the four-year curriculum, any one of which allows for election to the extent of 50 hours during the junior and senior years. This gives abundant opportunity for the choice of the necessary professional educational courses to qualify for the State teacher's certificate and, at the same time, for a well-balanced technical schedule. The distribution of the work is about as follows: Technical agriculture, 50 hours; science, 44⅔ hours; cultural subjects, 15⅓ hours; educational courses, 10 hours; elective, 40 hours; total, 160 hours.

The educational courses required for certification call for 10 hours' work and are as follows: Psychology, 3⅓ hours; science of education, 3⅓ hours; and agricultural pedagogy, 3⅓ hours. "Many of the students preparing to teach have an opportunity for practice teaching in charge of classes in our short-course school for farmers. All are required to take some work in observation in the public schools where agriculture is taught."

Requirements for registration.—Fifteen high-school units and three years of collegiate work. An approved amount of experience in farm practice is necessary for graduation.

Students.—For professional educational courses 125 students are registered in 1916–17; 90 graduated in 1916, of whom 50 are now engaged in teaching.

Instructors.—Two instructors are engaged in furnishing the instruction in the educational courses.

HOME ECONOMICS.

Nature and scope.—The same general arrangement is provided for teacher training in home economics as in agriculture. The distribution of the work is as follows: Technical home economics, 60 hours; science, 40 hours; cultural, 26⅔ hours; educational, 10 hours; elective, 23⅓ hours; total, 160 hours.

The educational courses include psychology, science of education, and history of education. Opportunity is given for practice teaching and observation in the local schools.

Requirements for registration.—Same as for agriculture, except that no occupational experience is required.

Students.—For the educational courses, 60 women are registered in 1916–17; 57 graduated in 1916, of whom 45 are now engaged in teaching.

Instructors.—Same as for agriculture.

TRADES AND INDUSTRIES.

"We do not give direct instruction in training men and women for teachers of trades and industries; that is, for trade schools, but each year we place engineering and home economics graduates in the various trade schools of the State."

GENERAL REMARKS.

Certification.—In accordance with an act of the [illegible] the State board of education has granted the right of certification to t[illegible]n Agricultural College.

Such graduates as take one year's work (10 hours) in education are eligible to receive the State certificate on recommendation of the faculty.

UNIVERSITY OF MINNESOTA.

AGRICULTURE.

Nature and scope.—Agricultural education is one of the major options of the regular four-year curriculum in agriculture. The first year's work is the same as for the other options. The total number of hours required for graduation is 144. They are distributed about as follows: Technical agriculture, 65 hours; science, 30 hours; cultural subjects, 24 hours; educational courses, 15 hours; elective, 9 hours.

The required courses in education are as follows: Principles of industrial education, 3 hours; industrial education, 3 hours; methods of teaching high-school agriculture, 3 hours; teaching, 3 hours; organization and management, 3 hours. Among the agricultural courses is one on home and school gardening as applied to secondary schools. The college of education also offers a number of other educational courses that are open for election by agricultural students. Practice teaching forms a part of the course in teaching which is described as follows: "Observation of regular classes, interpretation of class practices; preparation of lesson plans and actual teaching of classes under careful supervision in recitation and laboratory; criticism and discussion of plans, methods, and results of student's teaching." The teaching is done either in the university secondary school of agriculture or in the local public schools.

Requirements for registration.—Fifteen units of high-school work, one year of collegiate work, and a working knowledge of farm operations.

Students.—For the agricultural education option, 40 men are registered in 1916–17; 31 students in the agricultural education option graduated in 1916, of whom 25 are now engaged in teaching.

Instructors.—Three instructors provide the special instruction in education.

HOME ECONOMICS.

Nature and scope.—The four-year curriculum in home economics offers a major option for those who are preparing for teaching. The distribution of the work of the complete curriculum is about as follows: Technical home economics courses, 42 hours; general science courses, 27 hours; cultural courses, 24 hours; psychology and education, 19 hours; elective, 20 hours; total, 132 hours.

The educational courses include elements of psychology, 3 hours; principles of industrial education, 3 hours; history of education, 3 hours; methods of teaching home economics, 5 hours; observation and teaching, 5 hours. The course in observation and teaching comprises observation of teaching in regular classes, criticism and discussion of class practice, lesson plans, methods, results, and examinations; preparation of lesson plans, and directed teaching of foods, cookery, home management, textiles and clothing. Each student is required to devote 6 hours per week for 12 weeks in actual observation and practice teaching in the local schools. A grade of C (81–87 per cent) in certain prerequisite courses is necessary for registration in the course in observation and teaching.

Requirements for registration.—Fifteen high-school units, junior collegiate standing, and a grade of C in certain prerequisite courses are required for registration in the teacher's option.

Students.—For the teacher's option in home economics, 132 women are registered in 1916–17; 38 graduated in 1916, of whom 33 are now teaching.

Instructors.—Three instructors and six critics provide the special instruction in education.

TRADES AND INDUSTRIES.

No special curriculum for the training of teachers for the trades and industries is offered. The college of agriculture and the college of education, however, offer a modified agriculture education curriculum which includes a 12-hour manual training course, a 6-hour course, a 3-hour course in mechanical drawing, a 6-hour course in industrial education, and a 3-hour course in methods and administration of manual training. The remainder of the curriculum is composed of agricultural courses in smaller proportions and of science and cultural subjects in about the same proportion as in the regular agricultural education option.

GENERAL REMARKS.

Certification.—"The University State teacher's certificate is granted to graduates of the college of agriculture who have met the requirements of the college of education in approved professional courses.

"The industrial certificate, which all Minnesota high-school teachers of agriculture or home economics are required to have, is granted by the State department of education to graduates of the college of agriculture who are recommended by the college and who have completed the professional training required by the regulations of the State department of education for special teachers in agriculture or home economics."

MISSISSIPPI AGRICULTURAL AND MECHANICAL COLLEGE.

AGRICULTURE.

Nature and scope.—A special four-year curriculum leading to the B. S. degree is offered by the school of industrial education, which is one of the major divisions of the college. The distribution of the work, exclusive of military and physical training, is as follows: Technical agriculture, 44⅔ hours[1]; science, 30⅔ hours; cultural subjects, 114⅔ hours; psychology and education, 26⅔ hours; total, 216⅔ hours. Since students are admitted with only 10 units of high-school work, much of the work under the head of cultural subjects includes English, history and mathematics of high-school grade. After deducting the first two years' work in these subjects, there remain 68 hours, which is still a relatively high proportion. Ten hours are devoted to sociology, logic, and ethics.

The educational courses include psychology, 6⅔ hours; history of education, 3⅓ hours; the educative process, 3⅓ hours; classroom management, 3⅓ hours; rural and high schools, 4 hours; special methods and practice teaching, 6 hours. In the last-named course "each student will be expected to do some practice teaching in application of the most approved method to primary, intermediate, and high-school subjects. Two hours' actual time a week throughout the junior year will be devoted to practical work vitally connected with teaching and school gardening. It will consist of seed selection and germination, soil preparation and fertilizers for gardens, study of the plant, garden pests, laying out garden plats for schools, hot beds, etc."

Requirements for registration.—Ten units of high-school work.

Students.—No information supplied.

Instructors.—Two instructors provide the special training in education.

HOME ECONOMICS.

No curriculum in home economics is offered.

TRADES AND INDUSTRIES.

Nature and scope.—The teacher-training curriculum in mechanic arts covers four years and leads to the degree of B. S. It is given in the school of industrial education, and, except that the technical courses relate to manual arts, it is very similar to that

[1] The reduction of "term hours" to "semester hours" equivalents necessitates the use of fractions.

offered for the training of teachers in agriculture. It includes three fundamental courses (10⅔ hours) in agriculture. The general distribution of the work, exclusive of military training, is as follows: Technical industrial work (including agriculture), 55⅓ hours; science, 17⅓ hours; cultural subjects, 116⅔ hours; psychology and education, 26⅔ hours; total, 216 hours.

The educational courses are the same as described under agriculture.

Requirements for registration.—Same as for agriculture.

Students.—No information supplied.

Instructors.—Two instructors provide the special training in education.

GENERAL REMARKS.

Certification.—Graduates of the college who have successfully completed 9 hours' (18 semester hours) work in education may be granted a teacher's professional license without examination.

UNIVERSITY OF MISSOURI.

AGRICULTURE.

Nature and scope.—"Students who are candidates for the life certificate in the University of Missouri are required to take 24 hours' work in education, including a theoretical course on the teaching of the subject of specialization and a course in practice teaching. In addition to that they are required to take a certain amount of hours (15 for agriculture) in their subject of specialization." Graduates of the regular four-year agricultural curriculum who carry as electives 24 hours in education, therefore, are eligible for certification. In this case the content of the curriculum, exclusive of military training, would be about as follows: Technical agriculture, 49 hours; science 40 hours; cultural subjects, 11 hours; education, 24 hours; total, 124 hours.

Many educational courses are available, among which may be mentioned: Educational psychology, 4 hours; psychology of learning, varying credit; history of education, 2 hours; theory of teaching, 3 hours; methods of teaching special subjects, 2 hours; school economy, 2 hours; principles of education, 3 hours; administration of agricultural education, 1 hour; high-school administration, 3 hours; and practice teaching, varying credit. Students are "required to do from one to two semesters' work in practice teaching in each of their subjects if they have not had considerable previous experience in teaching." The practice teaching provided is in the university high school which is maintained for this purpose.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Twenty-five students are registered in 1916–17 for special training in education. Five graduated with special training in 1916.

Instructors.—Seven instructors provide the instruction in the required educational work.

HOME ECONOMICS.

Nature and scope.—Students preparing to teach home economics are expected to complete the first two years' work in the college of arts and science and then to change over to the school of education, completing the requirements for the degree of B. S. Ed., with home economics as a special subject. The distribution of the work under this plan is as follows: Technical home economics, 15 hours; science, 10 hours; cultural subjects, 24 hours; education, 24 hours; elective, 47 hours; total, 120 hours. These are minimum requirements, and it may be assumed that approved schedules would show a larger proportion of work in technical home economics and science.

The educational courses available and the opportunity for practice teaching are the same as mentioned under agriculture. The work in methods and practice, of course, relates to home economics, rather than to agriculture.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—One hundred students are registered in 1916–17 for special training in education. Thirty graduated with special training in 1916.

Instructors.—Same as for agriculture.

TRADES AND INDUSTRIES.

Nature and scope.—Students preparing to teach the manual arts follow the same general plan as described for home economics. After substituting manual arts for home economics, the distribution of the work and the choice of educational courses is the same as indicated above.

Requirements for registration.—Same as for home economics.

Students.—Twenty-five students are registered in 1916–17 for special training in education. Seven graduated with special training in 1916.

GENERAL REMARKS.

Certification.—"The school of education is authorized by the Legislature of Missouri to confer certificates valid for life or for two years, according to the preparation of the candidate, upon persons who, in the judgment of the faculty, are considered qualified to teach in the public schools of the State."

For the life certificate the candidate must have (1) completed the requirements for the degree of B. S. in Ed., (2) obtained the required university credit in at least one subject of specialization, (3) demonstrated his ability to teach by practice teaching or by evidence of successful teaching experience.

For the two years' certificate the candidate must have completed two years' work (60 hours) in the college of arts and science, or its equivalent, and one year's work (30 hours) in the school of education, including 12 hours in designated professional courses.

MONTANA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

GENERAL REMARKS.

No teacher-training curriculum up till now has been offered in either agriculture, home economics, or mechanic arts, but for the year 1917–18 three regular four-year curricula are offered for the preparation of teachers in agriculture, home economics, and trades and industries, respectively. In each course the professional work is given in the junior and senior years. The work of the first two years in each curriculum is the same as that in the corresponding regular curriculum. "Teachers especially prepared in agricultural education, home economics, and trades and industries will be employed to conduct the work."

Of the 1916 graduates in the regular curricula, 3 in agriculture, 10 in home economics, and 1 in mechanic arts are now engaged in teaching their respective subjects.

Certification.—State certificates may be granted to graduates of higher educational institutions upon conditions established by the State board of education.

UNIVERSITY OF NEBRASKA.

AGRICULTURE.

Nature and scope.—Students preparing to teach may take one of the regular major options like agronomy, animal husbandry, horticulture, etc., in the four-year agricultural curriculum, which permits elective courses to the extent of 22 hours. Since only 21 hours in psychology and education are necessary for the university teacher's certificate, there is an opportunity to meet this requirement and yet keep within the minimum requirements for graduation. The distribution of the courses is about as follows: Technical agriculture, 47 hours; science, 31 hours; cultural subjects, 21

hours; psychology and education, 21 hours; elective, 1 hour; total, 121 hours. The educational courses include psychology, 6 hours; history of education, 6 hours; educational psychology, 2 hours; educational theory and practice, 3 hours; agricultural education, 2 hours; special methods of agriculture, 2 hours. The course in special methods includes from four to five hours of actual teaching, observation, and discussion in the work of the university high school.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Seven men are registered for special training in 1916–17. Eight graduated in 1916, of whom four are now engaged in teaching.

Instructors.—Four instructors provide the special educational training.

HOME ECONOMICS.

Nature and scope.—The four-year curriculum in home economics includes eight hours in psychology and education and allows for 25 hours of elective work, some of which may embrace additional courses required for the university teacher's certificate. With these courses included, the distribution of the work, exclusive of physical training, is about as follows: Technical home economics, including art and design, 33 hours; science, 28 hours; cultural subjects, 26 hours; psychology and education, 21 hours; elective, 12 hours; total, 120 hours.

The educational courses are the same as for agriculture, except that a four-hour course in methods is substituted for agricultural education and agricultural methods. The course in methods includes two hours' recitation and four hours of preparation and practice teaching and observation.

Requirements for registration.—Same as for agriculture.

Students.—No information supplied. The catalogue shows that nine of the 1916 graduates in home economics received the university teacher's certificate.

Instructors.—Same as for agriculture.

TRADES AND INDUSTRIES.

No curriculum is offered for the training of teachers for the trades and industries.

GENERAL REMARKS.

Certification.—The teacher's college diploma and the university teacher's certificate are granted to four-year graduates from the university who have met the following requirements:

		Hours.
A	General university credit (first two years)	62
	Psychology	6
	Educational courses (professional and technical)	15
	Major and minor subjects (specialization)	40
	Total	123
B	The certificate is granted only to students who have (1) maintained an average of at least 80 per cent in the group of subjects to be taught and a high average in all other subjects in the collegiate course and (2) showed special fitness for teaching.	

This certificate entitles its holder to teach in any high school in Nebraska. After three years' successful teaching experience, it may be converted into a life certificate by the indorsement of the State superintendent.

UNIVERSITY OF NEVADA.

AGRICULTURE.

Nature and scope.—The regular four-year agricultural curriculum leading to the B. S. degree contains a one-semester practice course in teaching agriculture. It also provides for sufficient elective work to enable a student to carry enough professional work in education to qualify for the teacher's high-school diploma. The content of the whole curriculum, with this work included and military training excluded, consists of technical agriculture, 53 hours; science, 48 hours; cultural subjects, 6 hours; psychology and education, 18 hours; elective, 19 hours; total, 144 hours.

The required amount of professional courses includes psychology, 3 hours; history of education, 4 hours; principles of education, 3 hours; high-school organization and school law, 3 hours; observation and practice teaching, 5 hours. The practice teaching consists of one semester's work in actual teaching in the "school of agriculture" (secondary).

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Forty-one students are registered in 1916–17 for special educational training in agriculture. None graduated in 1916.

Instructors.—Three instructors provide the professional courses in education.

HOME ECONOMICS.

Nature and scope—In home economics, as in agriculture, the students of the regular four-year curriculum who are preparing to teach may elect the required educational courses. The curriculum requires one 2-hour course in methods of teaching home economics. The distribution of the work including the necessary education for certification is about as follows: Technical home economics, 37 hours; science, 30 hours; cultural subjects, 38 hours; education, 18 hours; elective, 11 hours; total, 134 hours.

The available educational courses are the same as listed under agriculture.

Requirements for registration.—Same as for agriculture.

Students.—Sixteen students are registered in 1916–17 for teacher training in home economics. The first class in this curriculum graduates in 1917.

Instructors.—Three instructors provide the training in professional courses.

TRADES AND INDUSTRIES.

No curriculum for the special preparation of teachers in grades and industries is offered. Students in engineering who desire to teach may elect educational courses.

GENERAL REMARKS.

Certification.—The college of arts and science maintains a department of education with "direct affiliations with the colleges of agriculture (including home economics) and engineering, in cooperative work in the training of teachers." The department "offers to prospective secondary school teachers a liberal and professional course of study of four years. At the end of this time successful candidates are granted a bachelor's degree and a teacher's high-school diploma, the latter giving title to a teacher's first-grade high-school certificate. On evidence later of at least 45 months of successful teaching, this certificate is exchangeable to the State board of education for a life diploma."

NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

AGRICULTURE.

Nature and scope.—Students preparing to teach are expected to take the agricultural education major of the regular four-year curriculum in agriculture leading to the bachelor's degree. The work of the first two years is the same as in other majors. The distribution of the work, exclusive of military training, is as follows: Technical agriculture, 47 hours; science, 35 hours; cultural subjects, 22 hours; psychology and education, 13 hours; elective, 13 hours; total, 130 hours.

The educational courses include introduction to psychology, 3 hours; psychology of the adolescent, 3 hours; history of education, 2 hours; secondary education, 3 hours; school hygiene, 2 hours. Principles of education, 3 hours, and administration and supervision, 2 hours, are open for election. The course in secondary education comprises "the proper place and function of the high school, its relation to the grades, college, and practical life; methods of instruction, program of studies, examinations, and promotions; educational values of the various studies; qualities of an efficient teacher; and relation to the various elements of the school community. Each student will be required to make systematic observations in schools near Durham." There is no provision for practice teaching.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work. Six months' recent farm experience necessary for graduation.

Students.—No information supplied.

Instructors.—One instructor provides the instruction in educational courses.

HOME ECONOMICS.

Nature and scope.—The regular four-year curriculum leading to the B. S. degree permits sufficient elective work to students to carry the necessary educational courses to prepare for State teacher's examinations. The distribution of the work exclusive of physical training is about as follows: Technical home economics, 48 hours; science, 30 hours; cultural subjects, 40 hours; psychology and education, 18 hours; total, 134 hours.

The educational courses include introduction to psychology, 3 hours; psychology of the adolescent, 3 hours; history of education, 2 hours; school hygiene, 2 hours; secondary education, 3 hours; history and theory of industrial education, 2 hours; methods of teaching home economics, 3 hours. The last-named course is described as follows: "Development of home economics. Planning of courses especially for secondary schools; outlines of lessons and methods of presentation; selection of equipment." For description of the course in secondary education, see under "Agriculture." No information has been supplied concerning practice teaching.

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—No information supplied.

Instructors.—Two instructors provide the special instruction in education.

TRADES AND INDUSTRIES.

Nature and scope.—This institution offers a special four-year curriculum in mechanic arts for teachers leading to the B. S. degree. The general plan follows closely that of home economics. The distribution of the work, exclusive of military training, is about as follows: Technical manual arts (including forestry), 49 hours; science, 24 hours; cultural subjects, 41 hours; psychology and education, 16 hours; total, 130 hours.

The educational courses include introduction to psychology, 3 hours; adolescent psychology, 3 hours; secondary education, 3 hours; school hygiene, 2 hours; history and theory of industrial education, 2 hours; manual training and exercises in practical teaching, 3 hours. No information has been supplied with regard to practice teaching.

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—No information supplied.

Instructors.—Two instructors provide the special instruction in education for manual arts teachers.

RUTGERS COLLEGE, NEW JERSEY.

AGRICULTURE.

Nature and scope.—The departments of education and of agriculture in cooperation offer courses for the training of teachers of agriculture in secondary schools. The first year's work is the same as that offered to all students in the technical science curriculum. The work of the second and third years is the same as that offered to all students in the four-year agricultural curriculum. In the senior year the student is required to choose one of 14 optional groups consisting of a major, 12 hours, and a minor, 12 hours. Three of the options include, as minors, psychology and education. By selecting one of these options the distribution of courses in the complete four-year curriculum would be as follows: Technical agricultural course, 42 hours; science, 40 hours; cultural subjects, 48 hours; psychology and education, 12 hours; making a total of 142 hours, which is the minimum requirement, exclusive of military drill.

The educational courses include educational psychology, 3 hours; educational sociology, 3 hours: agricultural education, 6 hours. At least half of the time in the latter course is devoted to observation and practice teaching.

Requirements for registration.—Fifteen high-school units and two years of collegiate work.

Students.—Three men are registered in 1916–17 for the agricultural education optional. No students were graduated with professional training in 1916. Four of the regular four-year graduates in 1916 are now engaged in teaching or supervision.

Instructors.—Three instructors provide the special instruction in the educational courses.

GENERAL REMARKS.

No curricula are available for the preparation of teachers in either home economics or trades and industries.

Certification.—"Candidates for certificates to teach in secondary schools of New Jersey are required by the department of public instruction to possess a knowledge of the fields of history of education, educational psychology, and secondary education. Work satisfactorily completed in the correspondence courses offered by the college is accepted by the State board of examiners in lieu of examinations in those subjects for certificates."

NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

No special teacher-training curricula are offered. In the home economics curriculum, a four-hour course in general psychology and a four-hour course in rural education are included.

CORNELL UNIVERSITY, NEW YORK.

AGRICULTURE.

Nature and scope.—Agricultural education is included in a group of subjects which may be elected as a major option during the junior and senior years. Considerable latitude is allowed for election, but a student preparing to teach agriculture, in common with other students in the college, would be required to complete approximately the following: Cultural subjects, 14 hours; science, 38 hours; psychology and educa-

tion, 14 hours; elective, 54 hours; total, 120 hours. The electives are selected with the advice of the department of rural education.

The educational courses and their prerequisites include elementary psychology, 3 hours; educational psychology, 3 hours; agriculture in the high school, 3 hours; teaching agriculture, 5 hours. Additional courses in the college of arts and sciences, such as principles of education, 3 hours, and history of education, 3 hours, may be elected. "Teaching agriculture is not required by all, because this experience is obtained under a system by which seniors are placed in high schools for one-half year, where they act as assistants to the regular teachers of agriculture. It has been impossible to furnish facilities so that such work could be required of all prospective teachers."

Requirements for registration.—Fifteen high-school units and two years of collegiate work. Experience in the common farm operations and practices is necessary. Students deficient in this must take special work without credit before registering for senior work.

Students.—For the agricultural education option, 43 men and 4 women are registered in 1916–17; 82 students, who took special training courses in connection with the agricultural curriculum, graduated in 1916; 35 of these are now engaged in teaching.

Instructors.—Two instructors in the college of agriculture provide the special instruction in agricultural education. At least two additional instructors contribute to the work in providing instruction in the prerequisite courses in psychology.

HOME ECONOMICS.

Nature and scope.—Home economics students take, with some modifications, the same required work during the first two years as the students in agriculture. In the junior year students may elect the optional group, which includes home economics. Educational course may be taken as elective. The distribution of the required courses with the educational electives and their prerequisites is about as follows: Technical home economics (including floriculture and nature study), 23 hours; science, 40 hours; cultural subjects, 10 hours; psychology and education, 14 hours; elective, 33 hours; total, 120 hours. On account of certain courses demanding prerequisites, the available number of electives may be somewhat less than stated.

The educational courses are the same as those listed under agriculture, except that the high-school course and the teaching course relate to home economics instead of to agriculture.

Requirements for registration.—Same as for agriculture, except that no occupational experience is required.

Students.—Thirty-three women in the home economics option are registered in 1916–17 for the training courses. Thirty-three students who took training courses graduated in 1916. Seventeen of these are now engaged in teaching or supervision.

Instructors.—One instructor in the college of agriculture and probably two others in the college of arts and sciences provide the special instruction in the educational courses.

TRADES AND INDUSTRIES.

No special curriculum is offered for the preparation of teachers in the trades and industries.

GENERAL REMARKS.

Certification.—"Cornell bears no relation to the certification of teachers, except that teachers of agriculture and home making are recommended by the college of agriculture to the State department of education for a certificate, providing they have met the requirements for this certificate."

NORTH CAROLINA COLLEGE OF AGRICULTURE AND ENGINEERING.

AGRICULTURE.

Nature and scope.—For the year 1917–18 this institution offers in connection with their four-year agricultural curriculum a major option in agricultural education. The work of the first two years is wholly prescribed and is the same as for the other agricultural options. The distribution of the work of the whole four years, exclusive of military and physical training, is as follows: Technical agriculture, 47 hours; science, 54 hours; cultural subjects, 34 hours; psychology and education, 18 hours; elective, 20 hours; total, 173 hours.

The educational courses required are the following: Elementary psychology, 3 hours; history of education, 3 hours; methods of teaching, 3 hours; methods of teaching agriculture, 3 hours; secondary education, 3 hours; schoolroom management, with supervised practice teaching, 3 hours. The last-named course is described as follows: "The students will be instructed in the best methods of controlling a class and a school room, and as far as is practicable will be given an opportunity to do some teaching and observation in near-by schools."

Requirements for registration.—Eleven units of high-school work and two years of collegiate work are required for registration in educational courses.

Students.—Since the curriculum will be offered for the first time next year, no students have been registered. Nine of the 1916 graduates from other agricultural options are now engaged in teaching.

Instructors.—Two instructors will furnish the special training in the preparation of teachers.

GENERAL REMARKS.

The institution offers no curricula for the special training of teachers in either home economics or trades and industries.

NORTH DAKOTA AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—The school of education offers a special four-year curriculum for the preparation of teachers in agriculture and leading to the degree of B. S. Ed. The distribution of the work in this curriculum, exclusive of military and physical training, is as follows: Technical agriculture, 55½ hours; science, 31½ hours; cultural subjects, 27½ hours; psychology and education, 20 hours; elective, 8 hours; total, 142 hours.

The required educational courses include history of education, 2⅔ hours; psychology, 2⅔ hours; principles of teaching, 2⅔ hours; vocational education, 2 hours; school administration, 2⅔ hours; school law, 2 hours; the high school, 2 hours; rural education, 1⅓ hours; current educational literature, 1⅓ hours; agricultural courses in high schools, ⅔ hour; observation and practice, 1⅓ to 3⅓ hours. The practice work is given in the agricultural and manual training model high school.

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—Fourteen men are registered in 1916–17 in the agricultural education curriculum; 14 graduated in 1916, of whom six are now engaged in teaching.

Instructors.—Two instructors provide the special training in education for agricultural students.

Two-year curriculum.—A special two-year curriculum in vocational education is offered especially for teachers in rural and consolidated schools. It includes 20 hours in selected vocational subjects, 18 hours in education, and 32⅔ hours in English, history, social science, mathematics, and science.

HOME ECONOMICS.

Nature and scope.—The school of home economics offers two curricula. The first two years' work is alike for both and is wholly prescribed. The work of the last two years in one case is quite general and is largely prescribed, while in the other it is wholly elective. The prescribed curriculum requires 11 hours' work in educational courses and allows for sufficient election to make up the requirements for certification 16 hours. The distribution of the work in this curriculum, including education and excluding physical training, is about as follows: Technical home economics, 34⅔ hours; science, 43⅓ hours; cultural subjects, 39⅓ hours; education, 16⅔ hours; elective, 8 hours; total, 142 hours.

The educational work is about the same as for agriculture, except that five hours' work is required in presentation and practice teaching in home economics instead of agricultural education.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Eighteen women are registered in 1916–17 for educational work in connection with home economics. Twenty-six graduated in 1916, of whom 25 are now teaching.

Instructors.—Three instructors provide the special instruction for the preparation of teachers in home economics.

TRADES AND INDUSTRIES.

Nature and scope.—The school of education offers a special four-year curriculum for teachers in mechanic arts, leading to the B. S. Ed. degree. The distribution of the work is as follows: Technical manual arts, 53⅓ hours; science, 17⅓ hours; cultural subjects, 31⅓ hours; psychology and education, 19⅓ hours; elective, 20⅔ hours; total, 142 hours.

The educational work is the same as for agriculture, except that social education (2 hours), and applied psychology (3 credits) are substituted for history of education and agricultural courses. Practice teaching in the agricultural and manual training model high school is required as for agriculture.

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—One man is registered in 1916–17 for special preparation for teaching manual arts. None graduated in 1916. Two 1916 graduates from the regular four-year engineering curriculum are now engaged in teaching.

Instructors.—Two instructors provide the special training for the preparation of teachers in manual arts.

Two-year curriculum.—A special two-year curriculum is offered for vocational teachers. It includes 25⅓ hours in selected vocational subjects, 18 hours in education, and 27⅓ hours in cultural and science subjects, making a total of 70⅔ hours.

GENERAL REMARKS.

Certification.—"Students who have completed the curriculum in education and other graduates of the agricultural college who have secured 24 credits (16 semester hours) in the department of education are granted credentials by the State board of examiners leading to life certificates to teach in the public schools of North Dakota."

The completion of a two-year curriculum, including 16 hours in education, entitles the student to a second-grade professional certificate issued by the State board of education.

OHIO STATE UNIVERSITY.

AGRICULTURE.

Nature and scope.—The college of education offers a special four-year curriculum in agricultural education leading to the degree B. S. in Ed. The distribution of the required work, exclusive of military and physical training, is as follows: Technical agriculture, 42 hours; science, 31 hours; cultural subjects, 18 hours; psychology and education, 22 hours; elective, 7 hours; total, 120 hours.

The educational courses include psychology, 6 hours; history of education, 6 hours; history of agricultural education, 2 hours; principles of education, 3 hours; observation, criticism, and practice, 3 hours; teaching of agriculture in the high school. A required six hours' course in the elements of general agriculture is listed in the catalogue under school administration, but is here included under technical agriculture. No information has been supplied regarding the nature and extent of practice teaching.

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—No information supplied.

Instructors.—No information supplied.

HOME ECONOMICS.

Nature and scope.—The college of education offers a special four-year curriculum leading to the degree B. S. in Ed. The distribution of the work, exclusive of physical education, is as follows: Technical home economics, including art and design; 28 hours; science, 32 hours; cultural subjects, 32 hours; psychology and education, 26 hours; elective, 2 hours; total, 120 hours.

The educational courses include psychology, 6 hours; history of education, 6 hours; principles of education, 3 hours; observation, criticism, and practice, 3 hours; public education in the United States, 3 hours; State school administration, 3 hours; teaching of home economics, 2 hours. No information has been supplied concerning the nature and extent of practice teaching.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—No information supplied.

Instructors.—No information supplied.

TRADES AND INDUSTRIES.

Nature and scope.—A four-year curriculum leading to the degree B. S. in Ed. is offered by the college of education. The general plan is similar to that of the curricula in agriculture and in home economics. The distribution of the work, exclusive of military and physical training, is as follows: Technical manual arts, 36 hours; science, 16 hours; cultural subjects, 38 hours; psychology and education, 28 hours; elective, 2 hours; total, 120 hours.

The educational courses include psychology, 6 hours; educational psychology, 4 hours; history of education, 6 hours; principles of education, 3 hours; observation, criticism, and practice, 3 hours; public education in United States, 3 hours; teaching of manual training, 3 hours. No information has been supplied concerning the nature and extent of practice work.

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—No information supplied.

Instructors.—No information supplied.

OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE.

AGRICULTURE.

Nature and scope.—The school of education offers a special four-year curriculum in education with an opportunity to elect as a major either agriculture, home economics, manual training, or other vocational subjects. Election commences in the freshman year and is continued with gradually increasing amounts throughout the whole curriculum. The distribution of the work, exclusive of military and physical training, is approximately as follows: Technical agriculture, 39 hours; science, 41 hours; cultural subjects, 24 hours; psychology and education, 24 hours; total, 128 hours. Since there is considerable latitude allowed in the selection of courses, this distribution should be regarded only as a possibility. The educational work is, however, definitely required.

The educational courses include psychology, 5 hours; applied psychology, 3 hours; child study, 2 hours; principles of education, 2 hours; history of modern education, 2 hours; philosophy of education, 2 hours; methods and management, 2 hours; rural education, 2 hours; administration and supervision, 2 hours; theory and practice of teaching agriculture, 2 hours. The last-mentioned course is given during the senior year and includes at least 2 hours per week, for 18 weeks, of actual practice in assisting in the teaching of under classmen.

Requirements for registration.—Fifteen units of high-school work.

Students.—No information supplied.

Instructors.—Three instructors provide the instruction in educational work.

HOME ECONOMICS.

Nature and scope.—Students preparing to teach may take either the special four-year curriculum in education and elect major work in home economics or the regular four-year curriculum in home economics and carry educational work as elective. In the former case the distribution of the work would be about the same as that shown above under agriculture. In the latter case, the distribution of the work, exclusive of physical training, would be as follows: Technical home economics, 50⅔ hours; science, 29¼ hours; cultural subjects, 28⅔ hours; psychology and education, 19¼ hours; total, 128 hours. Some additional work (not exceeding 4⅔ hours) in education may be necessary to meet the requirements for certification.

The educational courses prescribed are: Methods of teaching textiles, 2 hours; and home economics education, 6⅔ hours. The courses open for election are listed under agriculture. The course in home economics education includes 4 hours' class work and 8 hours' practical work in "observation, demonstrations, and practice."

Requirements for registration.—Fifteen units of high-school work.

Students.—No information supplied.

Instructors.—Three instructors provide the special instruction in education.

TRADES AND INDUSTRIES.

Nature and scope.—The four-year curriculum in education, leading to the B. S. degree, offers a major option in manual training. The distribution of the work is about the same as described under agriculture, except that technical manual arts replaces technical agriculture. The educational courses are the same, except that the course in the theory and practice of teaching pertains to manual training.

Requirements for registration.—Same as for agriculture.

Students.—No information supplied.

Instructors.—Three instructors provide the special training in education.

GENERAL REMARKS.

Certification.—"Students who complete the full four years' course in the school of education receive a bachelor of science degree and a State life certificate in Oklahoma. * * * When a subject is completed at the college, the certificate-granting authorities of the State accept that credit instead of an examination."

OREGON AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—Students preparing to teach agriculture may elect agricultural education as their major option. The major election occurs at the beginning of the junior year. The required work, exclusive of military and physical training, is distributed as follows: Technical agriculture, 28 hours; science, 30 hours; cultural subjects, 13 hours; education, 15 hours; elective, 41 hours; total, 127 hours.

Among the educational courses available are general psychology, 3 hours; educational psychology, 2 hours; history of education, 3 hours; vocational education, 2 hours; principles of education, 3 hours; vocational guidance, 2 hours; special methods in agriculture, 4 hours; and others. The last-mentioned course includes practice teaching in the local elementary and high schools.

Requirements for registration.—Fifteen units of high-school work and two years' collegiate work. Some farm experience necessary for graduation. May be obtained either before or after entering college.

Students.—Ten men are registered in 1916–17 in the agricultural education option. Seven graduated in 1916, of whom two are now engaged in teaching.

Instructors.—Two instructors provide the special training in agricultural education.

HOME ECONOMICS.

Nature and scope.—The work in teacher training in home economics comprises the general four-year professional curriculum in which the educational courses are elected. The first two years' work is prescribed. The subjects for the junior and senior years must be selected from special groups. The following represents approximately the distribution of the work according to such a selection: Technical home economics, 27 hours; science, 31 hours; cultural subjects, 38 hours; education, 15 hours; elective, 17 hours; total, 128 hours (exclusive of physical training).

The educational courses are about the same as listed under agriculture, except that the course in methods applies to home economics. The work in practice teaching, including the preparation and the making of reports, is equivalent to about 144 actual school hours.

Requirements for registration.—Same as for agriculture except that no occupational experience is required.

Students.—Seventy-five women are registered in 1916–17 for the special work in education; 68 graduated in 1916, 56 of whom are now engaged in teaching.

Instructors.—Five instructors provide the special instruction in education.

TRADES AND INDUSTRIES.

Nature and scope.—A four-year curriculum in industrial arts leading to a degree is offered for the special preparation of teachers. The work, exclusive of military and physical training, is about as follows: Technical industrial arts, 51 hours; science, 12 hours; cultural subjects, 25 hours; education, 16 hours; elective, 22 hours; total, 126 hours. The educational course is about the same as listed under agriculture, except that the course in methods concerns manual training rather than agriculture. The work of practice teaching includes about 144 actual school hours in the local public schools. Industrial courses are offered in "pattern making, foundry work, woodwork, carpentry, forging, arts metal work, cabinetwork, joinery, printing, concrete and cement work, gas engines, farm engines, plumbing, machine-shop practice,

etc. Other courses are contemplated. These courses are offered under as nearly trade conditions as it is possible to give them in shops of this kind. As an illustration, we are now constructing a glue press that on the market would cost about $218. Every step has been taken up in the different departments of our shops the same as in a commercial shop; all the pieces numbered; all the plates numbered and lettered; and other commercial processes are exactly followed."

Requirements for registration.—Same as for agriculture, except that no occupational experience is necessary other than that offered in the various courses.

Students.—Fourteen men are registered in 1916–17 for the industrial educational curriculum; 12 graduated in 1916, all of whom are now engaged in teaching. Nine students who graduated from other curricula, but who took minors in industrial education are also engaged in teaching these subjects.

Instructors.—Three instructors provide the special training in education.

GENERAL REMARKS.

Certification.—"The Oregon school law grants a high-school teaching certificate to graduates who have taken 15 credits (semester hours) in education."

PENNSYLVANIA STATE COLLEGE.

AGRICULTURE.

Nature and scope.—Students preparing to teach may elect the agricultural education option at the beginning of their junior year. The required work, exclusive of military and physical training, is classified as follows: Technical agriculture, 47 hours; science, 45 hours; cultural subjects, 41 hours; psychology and education, 18 hours; elective, 7 hours; total, 158 hours. The educational courses include psychology, 3 hours; pedagogy of agriculture, 3 hours; child development and adolescence, 3 hours; principles of education, 3 hours; practice in teaching, 6 hours. The practice teaching is provided for in the local high school during the senior year or in a six-weeks summer normal school preceding the senior year.

Requirements for registration.—Fifteen units of high-school work and two years' collegiate work.

Students.—Forty-one men are enrolled in 1916–17 for the agricultural education option. Nineteen graduated in 1916, of whom 10 are now engaged in teaching. Five 1916 graduates from other agricultural options are also engaged in teaching.

Instructors.—Two instructors provide the special instruction in education.

HOME ECONOMICS.

Nature and scope.—Two home economics curricula are offered, one in domestic art and the other in domestic science. In either curriculum, provision is made for sufficient educational work to meet the requirements of the State law for a teacher's provisional college certificate. The first two years' work is the same for both curricula. The distribution of the work in the domestic science option, exclusive of physical training, is as follows: Technical home economics, 46 hours; science, 39 hours; cultural subjects, 39 hours; psychology and education, 15½ hours; elective, 14 hours; total, 153½ hours. The educational courses include psychology, 3 hours; history of education, 3 hours; principles of education, 3 hours; observation of teaching, ½ hour; and methods of teaching, 6 hours. Practice teaching is provided in the local public schools. It is required throughout the entire senior year and is supervised and criticized by members of the home economics faculty. Two hours of actual teaching per week, for 35 weeks, and one hour of recitation per week for 26 weeks, are required. The recitation period is devoted to a consideration of the relation of home economics to education; its place in the curriculum; planning and presentation of lessons and courses of study; problems of equipment and cost, etc.

Requirements for registration.—Same as for agriculture.

Students.—Twelve students are registered in 1916 for the educational courses. Fifteen graduated in 1916, of whom 12 are now engaged in teaching.

Instructors.—Two instructors provide the special instruction in education.

TRADES AND INDUSTRIES.

Nature and scope.—Two curricula are offered in industrial education.

1. A four-year curriculum is provided by the school of engineering for the purpose of preparing teachers in manual arts or teachers and supervisors of industrial schools. The work of the freshman year is the same as that required in the regular engineering courses. The distribution of the work for the whole curriculum, exclusive of military and physical training, is about as follows: Industrial arts, 69 hours; science, 9 hours; cultural subjects (including higher mathematics), 51 hours; educational courses, 16 hours; elective, 8 hours; total, 153 hours.

The educational courses include psychology, 3 hours; history of education, 3 hours; principles of education, 3 hours; principles of industrial education, 3 hours; practice teaching (in wood turning, forging, foundry practice, and pattern making), 4 hours. "In the junior and senior years, students act as assistants to the instructors in the college shops and as student teachers in manual arts in the local high schools, under the supervision of a member of the department of industrial engineering." The equivalent of six hours of actual teaching per week, for 35 weeks, is required.

2. The two-year curriculum in industrial education is planned "to prepare teachers of manual training for elementary and high schools. This is to give training to persons who have met with success as teachers and who have developed technical skill by special preparation and to persons with trade experience and who desire to gain a knowledge of the technique of teaching through college work. The applicants for entrance to this curriculum must present evidence of satisfactory preparation in the subject upon which the work of the course is built and, in addition to this, must satisfy the head of the department as to their general fitness for the professional work they have chosen."

The curriculum offers two options, one in woodworking and the other in metal working. Sixty-nine credit hours (exclusive of military training) constitute the two years' work and this is made up as follows: Industrial arts, 45 hours; trigonometry, 5 hours; psychology and education, 13 hours; elective, 6 hours. The educational courses include psychology, principles of education, industrial education, secondary education, and practice teaching in either machine-shop practice or woodworking. The practice teaching is afforded in the same way as in the four-year curriculum, but comprises only 3 hours per week for 18 weeks.

Two students graduated from this curriculum in 1916.

Requirements for registration.—For the four-year curriculum, 15 units of high-school work and one year of collegiate work.

Students.—Five students are registered in 1916–17 in the industrial education curriculum. Three students graduated in 1916, all of whom are now engaged in teaching or supervision.

Instructors.—Seven instructors provide the special instruction in industrial education.

GENERAL REMARKS.

Certification.—"Under the provisions of the school code, the State superintendent of public instruction is authorized to grant a three-year provisional teacher's certificate to graduates who complete not less than 200 hours' work (slightly more than 11 credit hours) in pedagogical studies, such as psychology, ethics, logic, history of education, school management, and methods of teaching."

RHODE ISLAND STATE COLLEGE.

AGRICULTURE.

Nature and scope.—A special curriculum in applied science is offered for persons who are preparing to teach in industrial schools. The work during the first two years is devoted almost entirely to cultural and science subjects. In the junior and senior years there is a continuation of the earlier work and an opportunity to specialize in either agriculture, biology, or chemistry. The distribution of the work for students in the agricultural option, exclusive of military or physical training, is about as follows: Technical agriculture, 38 hours; science, 48 hours; cultural subjects, 52 hours; psychology and education, 14 hours; elective, 12 hours; total, 164 hours.

The required educational courses are as follows: Educational psychology, 3 hours; history of education, 3 hours; principles of education, 3 hours; secondary education, 3 hours; school law, 1 hour; school management, 1 hour. No provision is made for practice teaching.

Requirements for registration.—Fourteen units of high-school work and two years of collegiate work. No occupational experience required.

Students.—Three men are registered in 1916-17 for the agricultural option of the applied science curriculum. One student graduated from this option in 1916.

Instructors.—One instructor provides the special instruction in education for agricultural students.

HOME ECONOMICS.

Nature and scope.—The regular four-year home economics curriculum provides opportunity for assigned and elective work in education. The distribution of the work, exclusive of physical training, is as follows: Technical home economics (including drawing and art), 46 hours; science, 50 hours; cultural subjects, 47 hours; education, 15 hours; elective, 2 hours; total, 160 hours. The educational courses are the same as for agriculture, with the addition of one hour of work in teaching home economics. Students teach eighth-grade public-school pupils two hours a week in practical laboratory work."

Requirements for registration.—Same as for agriculture.

Students.—Twelve women are registered in 1916–17 for the educational courses. Three students graduated in 1916. One of these is now engaged in teaching.

Instructors.—Two instructors provide the special instruction in education.

TRADES AND INDUSTRIES.

No curriculum is offered for the training of teachers in trades and industries.

GENERAL REMARKS.

Certification.—The following resolution adopted by the State board of education is self-explanatory: "The certification of the president that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island college will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

CLEMSON AGRICULTURAL COLLEGE, SOUTH CAROLINA.

AGRICULTURE.

Nature and scope.—The only special training in education open to students of this institution consists of "a short practical course designed to give the student a knowledge of the methods used in teaching agricultural subjects in different States and their adaptation to local needs." It is an elective course consisting of but one term

hour (⅔ semester hour). "During the session of 1917–18 the following courses in education will be introduced into the agricultural department of Clemson College: Psychology, 5 hours, first term; general principles of education, 5 hours, second term; agricultural teaching, 5 hours, third term.

"In addition to this, practice work for two hours per week for two terms is planned. A course in rural sociology is also to be added as an elective for those who are to teach. An instructor has already been selected for the rural sociology and psychology; an additional instructor is to be engaged for the education work." (The additional educational work proposed is indicated in *term hours*. By dividing the number of term hours in each case by two-thirds, the number of semester hours may be obtained).

Requirements for registration.—Eleven units of high-school work and three years of collegiate work. One year's farm experience before entering, or at least three months' summer work after entering.

Students.—Thirty men are registered in 1916–17 for the special work in education. Thirty-five graduated with this training in 1916. Twenty of these are now engaged in teaching or supervising.

Instructors.—One instructor provides the special instruction in education.

GENERAL REMARKS.

No special curricula are offered for training teachers in either home economics or trades and industries.

Certification.—"The universities and colleges of the State may provide a course, to be approved by the State board of education, the completion of which will entitle student to the degree of *Licentiate of instruction*, and the diploma therefor shall entitle holder to a first-grade county teacher's certificate.

SOUTH DAKOTA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

AGRICULTURE.

Nature and scope.—Students preparing to teach agriculture take the regular four-year curriculum, selecting one of four major options. In each option sufficient elective work is permitted to enable students to carry the educational work required for certification. With this included and military training excluded, the distribution of the work is as follows: Technical agriculture, 48 hours; science, 39 hours; cultural subjects, 34 hours; psychology and education, 19 hours; elective, 4 hours; total, 144 hours.

The educational work, except for general and educational psychology and observation and practice, may be selected from a list of several courses, including history of education, principles of teaching, school administration, educational sociology, vocational psychology, adolescent psychology, and educational measurements. Except the four-hour practice courses, these are all three-hour courses.

The practice course "consists of five months' practice teaching of four periods per week, using for this work our secondary school of agriculture. This work is under careful supervision. The lessons are carefully planned in advance and reports of work recorded."

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—Twenty-eight students are registered in 1916–17 for special training in agricultural education. Fourteen graduated with special training in 1916, of whom eight are now engaged in teaching. Two 1916 graduates without special training are also engaged in teaching.

Instructors.—Two instructors provide the professional training in agricultural education.

HOME ECONOMICS.

Nature and scope.—The regular four-year curriculum in home economics combines domestic science and domestic art and includes a three-hour course in general psychology. It also provides for sufficient elective work to enable students to carry the educational courses required for certification. The distribution of the work is as follows: Technical home economics, 46 hours; science, 36 hours; cultural subjects, 46 hours; psychology and education, 19 hours; total, 147 hours.

The educational courses are the same as for agricultural education, except that the work in observation and practice relates to home economics. Observation and practice are afforded by the school of agriculture, in which is offered a four-year secondary curriculum for young women.

Requirements for registration.—Same as for agriculture.

Students.—Forty-six women are registered in 1916–17 for professional training in home economics education. Sixteen graduated with professional training in 1916, of whom 15 are now engaged in teaching.

Instructors.—Four instructors provide the special educational work for the training of teachers in home economics.

TRADES AND INDUSTRIES.

Nature and scope.—The four-year general science curriculum provides for considerable elective work in all four years, and students preparing to teach manual or industrial arts are expected to register for this curriculum and elect the required work in manual arts and education. An acceptable schedule with this included shows a distribution of work about as follows: Technical manual arts, 21 hours; science, 44 hours; cultural subjects, 50 hours; psychology and education, 19 hours; elective, 10 hours; total, 144 hours.

The educational courses are the same as for agricultural education. The practice work is the same in both nature and extent, except that it pertains to shop practice.

Requirements for registration.—Same as for agriculture.

Students.—Forty-eight men and 20 women were registered in 1916–17 for professional training in industrial education. Eight graduated with special training in 1916, of whom seven are now engaged in teaching.—One 1916 graduate without special training is also engaged in teaching.

Instructors.—Two instructors provide the special training for teachers of industrial work.

GENERAL REMARKS.

Certification.—"Students who successfully complete 15 hours' work in education are eligible to State certification."

UNIVERSITY OF TENNESSEE.

AGRICULTURE.

Nature and scope.—Students preparing to teach take a modified form of the regular four-year agricultural curriculum. This leads to the degree B. S. in Ed. The distribution of the work, exclusive of military training, is about as follows: Technical agriculture, 37 hours; science, 39 hours; cultural subjects, 36 hours; psychology and education, 24 hours; total, 136 hours. This amount of work exceeds the minimum requirements of the regular agricultural curriculum.

The educational courses include psychology, 6 hours; history of education, 3 hours; principles of teaching, 3 hours; secondary education, 3 hours; school hygiene and management, 3 hours; rural education in relation to country life, 3 hours; agricultural education, 3 hours. The last-named course includes instruction in "methods of presenting the different phases of agriculture, especially crops, soils, and live stock." These courses are recommended, but others may be substituted upon

approval. A course is offered in practice teaching which includes "application of the principles of school management, discipline, and teaching to observation in city schools; making lesson plans; and the actual teaching of lessons in classes through cooperation with local, city, and rural schools."

Requirements for registration.—Fourteen units of high-school work and at least one year of collegiate work.

Students.—No definite information supplied; large enrollment.

Instructors.—Four instructors provide the special instruction in education.

HOME ECONOMICS.

Nature and scope.—The school of education offers a special four-year curriculum for teachers leading to the degree B. S. in Ed. The distribution of the work, exclusive of physical training, is as follows: Technical home economics (including art), 36 hours; science, 24 hours; cultural subjects, 30 hours; psychology and education, 24 hours; elective, 6 hours; total, 120 hours.

Some opportunity is offered for a choice of educational courses, but those suggested in the catalogue are about the same as suggested in the agricultural education curriculum, except that the course in agricultural education is replaced by one in methods of teaching home economics and that the course in practice teaching is required in place of one of the others. In the practice teaching course, "each student is required to plan and teach several lessons in domestic art and domestic science under the supervision of a critic teacher."

Requirements for registration.—Fourteen units of high-school work and at least one year of collegiate work.

Students.—No definite information supplied; "large enrollment."

Instructors.—Five instructors provide the special training in psychology and education.

TRADES AND INDUSTRIES.

Nature and scope.—The school of education offers a special four-year curriculum in manual training leading to the degree B. S. in Ed. The distribution of the work, exclusive of military and physical training, is about as follows: Technical manual arts, 38 hours; science, 24 hours; cultural subjects, 40 hours; psychology and education, 24 hours; total, 126 hours. Since, during the junior and senior years, there is considerable opportunity for the selection of courses from certain groups, the distribution may vary somewhat.

The educational courses include psychology, 6 hours; history of education, 3 hours; teaching and supervision of manual arts, 3 hours; and educational elective courses, 12 hours. No practice teaching required, but may be elected.

Requirements for registration.—Same as for home economics.

Students.—No definite information supplied; "large enrollment."

Instructors.—At least three instructors contribute to the special instruction in educational courses.

GENERAL REMARKS.

Certification.—"In accordance with the new certificate law, * * * graduates of the University of Tennessee, who have completed any six half-year courses (18 hours) offered by the university in psychology and education, not less than two of which shall have special reference to high-school work, are entitled to professional high-school certificates of the first grade, good for five years."

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS.

AGRICULTURE.

Nature and scope.—Students desiring to become teachers of agriculture may select one of the agricultural education options in the regular four-year curriculum. Two such options are offered, one for those who desire a permanent certificate and one for

those who are working for the provisional or first-grade certificate. All of the first two years' work and part of the work of the last two years is alike for all agricultural options. The distribution of the four years' work, exclusive of military training, in the permanent certificate option, is as follows: Technical agriculture, 56 hours; science, 47 hours; cultural subjects, 22 hours; psychology and education, 24 hours; total, 149 hours.

The educational courses include educational psychology, 3 hours; administration of schools, 3 hours; rural education, 3 hours; vocational education, 3 hours; methods of teaching agriculture, 3 hours; high-school problems, 3 hours; agricultural extension and demonstration, 3 hours. The course in methods includes "lesson plans and practice teaching in agriculture and other kindred subjects."

Requirements for registration.—Fourteen units of high-school work and two years of collegiate work.

Students.—One hundred men are enrolled in 1916–17 for the agricultural education option. Thirty-two graduated in 1916. Ten of these are now engaged in teaching. One 1916 graduate from one of the other options is also engaged in teaching.

Instructors.—Two instructors provide the special instruction in education.

GENERAL REMARKS.

No special curricula are offered for the preparation of teachers in either home economics or trades and industries.

Certification.—"Under the laws of Texas, graduates of this college who have completed four full courses (equivalent to 24 semester hours) in education will be granted a permanent State certificate. Those who have completed one full course (equivalent to 6 semester hours) in education will be given a first-grade State certificate, which is good for four years."

AGRICULTURAL COLLEGE OF UTAH.

GENERAL REMARKS.

The college has not offered any special courses for the preparation of teachers, but it plans to do so as soon as funds are available for the purpose. Of the 1916 graduates from the regular four-year curricula, 25 in agriculture, 15 in home economics, and 8 in mechanic arts are now engaged in teaching or supervising their respective lines of work in secondary schools.

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE.

AGRICULTURE.

Nature and scope.—Agricultural education is one of the four major options of the regular four-year curriculum in agriculture. The work of the first two years is alike for all options. The distribution of the work of the four years is as follows: Technical agriculture, 53 hours; science, 40 hours; cultural subjects, 33 hours; psychology and education, 18 hours; total, 144 hours.

The educational courses include psychology, 6 hours; principles of instruction, 6 hours; teaching of agriculture, 6 hours. "Arrangements have been made for special practice teaching in connection with the city schools. Specially selected high schools throughout the State that are teaching agriculture will also be used as practice schools, the student teacher acting as assistant to the regular teacher of agriculture."

Requirements for registration.—Fourteen and one-half high-school units and two years of collegiate work. Six months' farm experience required either before or after entering college.

Students.—Eight men are registered in 1916–17 for the agricultural education option. One graduated in 1916 and 14 in 1915. Practically all of these are now

engaged in teaching agriculture. Several graduates from other options in agriculture are also engaged in teaching.

Instructors.—One instructor provides the special instruction in agricultural education, one in general education and one in psychology.

HOME ECONOMICS.

Nature and scope.—Only one four-year curriculum in home economics is offered, but this requires 22 hours' work in psychology and education. The work of the complete curriculum is distributed as follows: Technical home economics, 30 hours; science, 24 hours; cultural subjects, 36 hours; psychology and education, 22 hours; elective, 8 hours; total, 120 hours. The educational courses embrace psychology, 6 hours; principles of instruction, 6 hours; history of education, 6 hours; and teaching of home economics. The latter course includes some work in practice teaching (see under agriculture).

Requirements for registration.—Same as for agriculture, except that no occupational experience is required.

Students.—Eight women are registered for educational work in home economics in 1916–17. Six graduated in 1916, all of whom are now engaged in teaching or supervising home economics. One 1916 graduate without professional training is also engaged in teaching.

Instructors.—Two instructors provide the special instruction in education.

TRADES AND INDUSTRIES.

No special training curriculum is offered for the preparation of teachers in trades and industries.

GENERAL REMARKS.

Certification.—"This institution does not issue certificates to teachers. These certificates are issued by the commissioner of education, upon recommendations of the college. At present there is no specified requirement as to professional training, but there is an understanding between the college and the commissioner's office that students who expect to receive teacher's certificates shall have had adequate professional training."

VIRGINIA AGRICULTURAL AND MECHANICAL COLLEGE AND POLYTECHNIC INSTITUTE.

No curriculum is offered for the special preparation of teachers in either agriculture, home economics, or trades and industries. Twelve of the 1916 graduates from the regular four-year curriculum are now engaged in the teaching of agriculture.

STATE COLLEGE OF WASHINGTON.

AGRICULTURE.

Nature and scope.—"In this institution a student may prepare to become a teacher of agriculture either by entering the department of education and electing work in agriculture, or by entering the department of agriculture or the department of horticulture and electing work in education. According to our law, a student to teach in the State of Washington who is a graduate of an accredited institution—among which, of course, the State College is classed—must present 15 hours in education. This 15 hours may include general psychology. After this year students will be required to present 12 hours of education in addition to a course in general psychology. This will raise the requirements slightly." For students following the general four-year curriculum in agriculture and electing enough work in education to meet the requirements for certification, the distribution of the work would be about as follows: Tech-

nical agriculture, 46 hours; science, 40 hours; cultural subjects, 35 hours; psychology and education, 15 hours; elective, 14 hours; total, 150 hours. Students entering with credit for a foreign language may substitute other work in college. In such cases, the amount of work in cultural subjects will be less and in elective work proportionately more.

The educational courses available include psychology, 5 hours; history of education, 5 hours; principles of education, 3 hours; the high school, 3 hours; child study and adolescence, 5 hours; school administration and supervision, 3 hours; school hygiene, 2 hours; history and theory of industrial education, 2 hours; educational psychology, 3 hours; and methods of teaching agriculture, 2 hours. The last-mentioned course embraces "Outlining of courses of study, management of subjects in logical order, gathering of illustrative material, selection of special laboratory apparatus, choice of textbooks and references, discussion of modern methods and their adaptation to the character of students engaged in agricultural work." Opportunity is provided for practice teaching through cooperation with the local schools.

Requirements for registration.—Fifteen units of high-school work and two years of college work.

Students.—No information given regarding the number of students registered for agricultural education in 1916–17. Fifteen graduated with special training in agricultural education in 1916.

Instructors.—Four instructors provide the special training in education.

HOME ECONOMICS.

Nature and scope.—In home economics, two four-year curricula are offered, one in household science and one in household arts. Each of these provide for sufficient work in education to meet the requirements for certification. The distribution of the work is as follows: Technical home economics, 58 hours; science, 31 hours; cultural subjects, 40 hours; psychology and education, 15 hours; elective, 6 hours; total, 150 hours.

The educational courses required are: Psychology, 5 hours; history of education, 5 hours; special methods in home economics, 3 hours; educational elective, 2 hours. The course in methods embraces "Observation of teaching, the making of lesson plans, outlines for courses of lessons, and practice teaching." The practice work is done in cooperation with the local schools.

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work.

Students.—Sixteen students graduated with professional training in 1916.

Instructors.—Four instructors provide professional training in education.

TRADES AND INDUSTRIES.

Nature and scope.—Students preparing to teach manual arts may register for the general four-year curriculum in education and elect work in manual arts. The distribution of the work in this curriculum, with manual arts included, is as follows: Technical manual arts, 40 hours; science, 15 hours; cultural subjects, 40 hours; psychology and education, 35 hours; elective, 20 hours; total, 150 hours.

The required work in education includes psychology, 5 hours; history of education, 5 hours; educational psychology, 3 hours; adolescence, 5 hours; school hygiene, 2 hours; experimental psychology, 5 hours; principles of education, 3 hours; the high school, 3 hours; State manual, 2 hours; special methods of teaching manual arts, 2 hours. Opportunity is provided for practice teaching in the local public schools.

Requirements for registration.—Fifteen units of high-school work and one year of collegiate work.

Students.—No students are registered for this special curriculum and none graduated from it in 1916.

Instructors:—Four instructors provide the special training in manual arts education.

Two-year curriculum.—A two-year curriculum for teachers in manual arts is also provided. This includes 40 hours in manual arts, 15 hours in education, 10 hours in English, and 15 hours in elective work, making a total of 80 hours.

GENERAL REMARKS.

Certification.—"Under the authority conferred upon it by the school law of 1909 the board of regents of the college will grant State college normal diplomas to graduates of the college who have completed not less than 12 semester hours in the department of education, and State college life diplomas to those who, in addition to completing the required 12 semester hours in the department of education, present evidence of 24 months of successful teaching experience; provided that not less than 10 of the required 12 semester hours be selected from courses other than method courses in special subjects."

WEST VIRGINIA UNIVERSITY.

AGRICULTURE.

Nature and scope.—Students preparing to teach agriculture and to qualify for the State teacher's certificate may elect at the beginning of the junior year the agricultural education option of the four-year curriculum. Students in any of the agricultural options also may elect 20 hours' work in the department of education and qualify for the State teacher's certificate. In either case, the distribution of the work, exclusive of military training, is about as follows: Technical agriculture, 34 hours; science, 38 hours; cultural subjects, 20 hours; education, 20 hours; elective, 31 hours; total, 143 hours.

The available educational courses include history of education, 3 to 8 hours; philosophy of education, 6 hours; school administration and supervision, 2 to 3 hours; principles and art of teaching, 3 hours; criticism and supervision of instruction, 3 hours; psychology of learning and teaching, 3 hours; educational psychology, 2 hours; mental tests and measurements, 2 to 6 hours; history of agricultural education, 2 hours; high-school agriculture, 3 hours. The course in high-school agriculture includes a discussion of the subject matter suitable for a high-school course in agriculture. The second half of the course is devoted to methods of teaching agriculture from the high-school standpoint. "In addition to this, students in agriculture, under the supervision of the professor of agricultural education, give a course in general agriculture in the Morgantown high school during the second semester each year. During the second semester, 1916, each student taught 18 lessons."

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work. Proficiency in practical farm operations.

Students.—Seventeen students are registered in 1916–17 for special training in agricultural education. Eleven graduated with special training in 1916, all of whom are now engaged in teaching agriculture.

Instructors.—Four instructors provide the special instruction in education.

HOME ECONOMICS.

Nature and scope.—The regular four-year curriculum in home economics includes some educational courses and offers abundant opportunity for election. The distribution of the work for those preparing to teach is about as follows: Technical home economics, 36 hours; science, 15 hours; cultural subjects, 27 hours; education, 20 hours; elective, 30 hours; total, 128 hours. The educational courses available are listed under agriculture. In place of the course in high-school agriculture, home economics students may take a similar one in "home economics in public schools."

This course includes practice teaching and each student is required to "carry a class in sewing during the first semester, and cooking during the second semester in a first-year high school under the supervision of the professor in home economics. In addition, students in their senior year give practical teaching by assisting in the regular home economics classes in the high school."

Requirements for registration.—Fifteen units of high-school work and two years of collegiate work. One semester's residence in home economics demonstration cottage.

Students.—Ten women are registered in 1916–17 for special training in home economics education. Four students graduated with special training in 1916, all of whom are now teaching or supervising school work in home economics. Two 1916 graduates from the regular curriculum are also engaged in teaching home economics.

Instructors.—Same as for agriculture.

TRADES AND INDUSTRIES.

Nature and scope.—While the university catalogues no special curriculum for those who desire to teach the industrial arts, abundant opportunity is provided through combination curricula. Many very desirable courses are offered in manual arts, and these are open to election by students in other colleges of the university. Students in the arts and science curriculum may select education as their major and elect courses in mechanic arts to the extent of 32 hours.

GENERAL REMARKS.

Certification.—"Graduation from the university with not less than 20 semester hours in education will secure recommendation for high-school and for supervisor's certificates according to the following regulations:

"1. No courses in education will be counted as part of the 20 hours unless approved by the department of education.

"2. Persons who have received advanced standing in education must do at least 10 semester hours in regular college courses. These courses must not repeat those taken in another school, and they must be advanced work.

"3. Only a limited number of hours done in the summer school may be counted toward certification.

"4. Candidates for certification must demonstrate their fitness for recommendation by successful teaching practice courses.

"5. For the supervisor's certificate not less than five hours must be taken in administration and supervision."

UNIVERSITY OF WISCONSIN.

AGRICULTURE.

Nature and scope.—Students preparing to teach agriculture may major in any of the departments of the college of agriculture and select as electives the work in agricultural education which leads to a university teacher's certificate in agriculture. The work of the first two years is the same for all agricultural students. During the last two years considerable freedom in the choice of courses is allowed. Candidates for the university teacher's certificate, however, are required to take at least 15 hours in psychology and education and are advised to elect their technical agricultural work from certain groups of courses. The distribution of the work of the whole curriculum, exclusive of military and physical training, is about as follows: Technical agriculture, 55 hours; science, 35 hours; cultural subjects, 11 hours; psychology and education, 15 hours; elective, 19 hours; total, 135 hours.

All candidates for the university teachers' certificate are required to take the following educational courses: Agricultural education, 2 hours; methods of teaching agriculture, 2 hours; and special teachers' course in one of the technical departments.

The additional seven hours must be selected from the following: Psychology, 3 hours; history of education, 2 hours; public education, 2 hours; mental development, 2 hours; educational psychology, 2 hours; principles of education, 2 hours; educational practice, 2 hours. The work in practice teaching covers a period of nine weeks and is provided by the university high school and the local public schools.

A two-year curriculum in agriculture, including 8 hours' work in professional education, is also offered. Graduates from this curriculum "will be recommended by the director of the course for the training of teachers to receive a special license to teach agriculture in the schools of Wisconsin."

Requirements for registration (four-year curriculum).—Fourteen units of high-school work and two years of collegiate work. Six months of farm experience required before graduation.

Students.—Thirty-two men are registered in 1916–17 for the agricultural education option. Thirty-one graduated in 1916, of whom 24 are now engaged in teaching or supervising. Eight of the 1916 graduates in other agricultural options are now engaged in teaching.

Instructors.—Five instructors provide the special instruction in educational courses.

HOME ECONOMICS.

Nature and scope.—In the general curriculum in home economics opportunity is afforded for those who are preparing to teach to elect the professional educational courses required for the State teacher's certificate. With these included, the distribution of the work is as follows: Technical home economics, 36 to 40 hours; science, 29 hours; cultural subjects, 41 to 45 hours; education, 10 hours; total, 120 hours.

The professional work required for certification is psychology, 3 hours; education (choice of several courses), 5 hours; methods of teaching home economics, 2 hours. The students registering for the teacher's course in home economics must take practice teaching for 10 weeks, in which they are in observation and practice teaching daily at the Wisconsin High School. There is no regulation as to the number of lessons they shall teach. During that time they are expected to prepare the lesson for each period they are in attendance and to take part in the class work, either as a student who is studying methods, or as an instructor, as the supervisor requests. In addition to this, they have lectures in the organization of material and their laboratory work in the presentation of lessons to their own number and also laboratory practice in demonstration so as to equip them for the constant demands that are made upon home economics teachers for lectures and demonstrations before other organizations than the school. This work continues for one semester, one lecture per week and two laboratory periods, so that in both the practice teaching and the departmental teachers' course they receive what corresponds to four credits here:

Requirements for registration.—Fourteen units of high-school and two years of collegiate work with an average rank of 90. Experience in the management of a home is also required.

Students.—Thirty-six women are registered in 1916–17 for the educational courses. Twenty-seven secured the university teacher's certificate and graduated in 1916. Of this number, 25 are now engaged in teaching home economics. Four other students graduated in 1916 had taken professional training elsewhere, and are now teaching home economics.

Instructors.—Four instructors provide the instruction in the strictly educational courses.

TRADES AND INDUSTRIES.

Nature and scope.—"The manual arts department requires at least 30 credits (maximum 40), out of 128 for graduation, to be taken by students majoring in manual arts. These are technical in character and are chosen according to the line of industrial work the candidate wishes to teach." The department of manual arts is in-

cluded in the college of arts, letters, and science, and students may specialize in this subject on the major option basis. The distribution of the work for a four-year student majoring in manual arts is about as follows: Technical manual arts (including allied subjects), 47 hours; science, 10 hours; cultural subjects, 28 hours; educational courses, 9 hours; elective, 26 hours; total, 120 hours.

The strictly professional courses included in this curriculum are: Organization and administration, 2 hours; vocational education and guidance, 2 hours; teaching and supervision of manual arts, 2 hours; supervised practice, 2 hours; problems in manual training (seminar), 1 hour.

Four annual scholarships, each paying $200, are awarded to graduates of industrial normal schools or to carefully selected mechanics having the equivalent of a high-school training.

The department of manual arts, also "conducts what is known as the mechanics institute. This institute is composed of holders of special industrial scholarships. The regents of the university have established 12 of these scholarships for the purpose of encouraging skilled craftsmen to prepare to teach industrial arts in public schools, especially public continuation schools. Each scholarship entitles the holder to an honorarium of $60, paid at the conclusion of the institute which is held for eight weeks."

Requirements for registration (four-year curriculum with major in manual arts).—Fourteen units of high-school work and one year of collegiate work. One year's practical experience advised.

Students.—Thirty men and fifteen women are registered in 1916–17 for special training in manual arts as a major. Fourteen students completed in 1916 special training in manual arts, but not all of them graduated. Thirteen of these are now engaged in teaching.

Instructors.—Five instructors provide the special training in manual arts education.

GENERAL REMARKS.

Certification.—"In accordance with the statutes of the State of Wisconsin, university teachers' certificates are issued to all graduates of a regular collegiate course who complete the course in pedagogical instruction prescribed by the university. This certificate, when presented to the State superintendent, entitles the holder to receive a license to teach in any public school in Wisconsin for one year, renewable for a second year after one year of successful experience. Graduates who present satisfactory evidence of good moral character and two years of successful teaching in the Wisconsin public schools, after graduation, are entitled to receive from the State superintendent an unlimited State certificate."

Graduates in agriculture "will be entitled to receive the university teacher's certificate upon the recommendation of fitness by the professor of agricultural education and upon completing as a part of their elective work courses in psychology and education equivalent to six to eight credits in addition to special courses for teachers given in the college of agriculture. A minimum of 15 credits of professional work is required."

Graduates in home economics who have completed 36 to 40 hours' work in their major (general home economics, food, or textiles) and 15 to 20 credits in their minor (food textiles or housing) "will be entitled to receive the university teacher's certificate upon the recommendation of fitness by the department of home economics and upon completing courses in psychology and education equivalent to six or eight credits in addition to the department of teachers' courses. A minimum of 10 credits and a maximum of 15 credits of professional work is required."

"Graduates in manual arts are entitled to the university teacher's certificate upon the completion of their major courses and compliance with the university rules governing the granting of the teachers' certificate."

UNIVERSITY OF WYOMING.

AGRICULTURE.

No curriculum is offered for the training of teachers in agriculture.

HOME ECONOMICS.

Nature and scope.—The regular four-year curriculum leading to the degree B. S. in H. E. combines domestic science and domestic art and includes the professional courses in education required for the first-class teacher's certificate. The distribution of the work, exclusive of physical training, is as follows: Technical home economics, 38 hours; science, 36 hours; cultural subjects, 24 hours; psychology and education, 26 hours; total, 124 hours. "Students who wish to prepare to teach home economics in secondary schools or colleges should elect courses (in addition to above) along the line of allied sciences."

The educational courses included in the curriculum meet the requirements for certification and are as follows: Psychology, 3 hours; educational psychology, 3 hours; principles of teaching, 3 hours; history of education, 3 hours; high-school organization and administration, 4 hours; theory and practice of teaching domestic science, 5 hours; theory and practice of teaching domestic art, 5 hours. The courses in theory and practice of teaching include observation of classes, the writing of lesson plans, the management and care of the department and teaching classes in all grades under supervision, as well as planning courses of study and the equipment of laboratories at various costs. No definite period in the course will be set aside for either observation or practice. The two will go on together, so that the observation on a certain point will be followed by practice teaching with that as a particular problem. Toward the end of the course each student teacher will be expected to assume the entire responsibility for conducting some class. One hour a week throughout the session is set aside as a general discussion period, while the other four hours are given over to observation and practice in the university demonstration school under the direction of the training teacher.

Requirements for registration.—Fifteen units of high-school work, and one year of collegiate work.

Students.—Twenty-six women are registered in 1916–17 for the curriculum in home economics, including education. Six graduated with professional training in 1916. Two of these are now teaching or supervising home economics in the schools.

Instructors.—Six instructors provide the special instruction in education.

TRADES AND INDUSTRIES.

No curriculum is offered for the training of teachers in trades and industries.

GENERAL REMARKS.

Certification.—"A graduate of the four-year course for the training of high-school teachers is entitled to the professional first-class certificate, the highest grade certificate the State offers."