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UNIVERSITY OF COLORADO BULLETIN

Vol. XIV, No. 10.

Published Monthly by the Regents of the University of Colorado.
Entered at the Post Office, Boulder, Colorado, as second-class mail matter.

A GENERAL SURVEY OF PUBLIC HIGH-SCHOOL EDUCATION IN COLORADO



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BOULDER, COLORADO, OCTOBER, 1914

General Series No. 75
Education Series No. 3



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Colorado University
A GENERAL SURVEY OF PUBLIC
HIGH-SCHOOL EDUCATION
IN COLORADO

WILLIAM A. COOK
High-School Visitor



BOULDER, COLORADO, OCTOBER, 1914

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PREFATORY NOTE.

The desirability of a survey of high-school conditions in Colorado has been discussed for several years by the High-School and College Conference and in a way has been prepared for by the keeping of such reports as could be collected. This last year's field work has been focused upon this purpose. In the absence of any provision by the State for conducting such an investigation, it was arranged that the High-School Visitor of the University should gather data and carry on the study in connection with his regular functions during the year 1913-1914. The University, in addition to the Visitor's expense, has borne expenses for printing of blanks, clerical assistance in assembling data, and publication of results.

The aim from the first has been the making of an inventory, the "taking of stock", educationally. The value of surveys in education, as well as in all other lines of endeavor, has been seen for several years past, and each new survey seems to be undertaken in a more scientific spirit. This survey was asked for by men anxious to know just where we stand that we may see better what to do next. The aim throughout has been to avoid all sweeping adverse criticisms and to present all findings with as little bias as possible.

From the standardization of mechanical devices, articles of food, dress, manufacturing concerns, domesticated animals and plants, and even human beings, we have advanced to the standardizing of certain educational products, in the various branches of school work, and are now attempting to standardize educational institutions. For a number of years there have been certain "standards" which high schools have been asked to attain before being placed on accredited lists. These standards have been determined upon by committees not always conversant with conditions in detail. They have been inevitably general in form, and inspection in accordance with them has not been as searching as was desirable. There has been and there still is much groping for finer gradations in standards and for standards which will really help us to a more vital appraisement of our schools.

The problem of educational standardization is to devise standards which shall be as nearly as possible quantitative. The educational situation at any time is the resultant of a conflict between the theorist—the man with a vision—who has done much for education and can never be dispensed with, on the one hand, and the practical school men struggling under the limitations imposed by society, on the other. The survey comes to our aid by placing definitely before us the actual conditions and achievements: we discover that things are not what they "ought" to be on the one hand, nor are they what they "must" be on the other.

A very important outcome of any survey should be the collection and dissemination of information on matters that trouble those in the field. The Visitor has been impressed on his trips the past year with the number of questions asked regarding practices in other schools in respect to all sorts of matters; since the survey material has been more nearly complete, in-

quiries of many kinds have been coming in. This report is general; it does not attempt to present all of the detailed facts that have been gathered; it is planned to make supplementary studies of the material already gathered and to gather new material. Some twenty-five additional new problems are listed for investigation during the coming year. The survey blanks, on which this report is based, were not presumed to be at all inclusive; they sought for light on a number of the more salient points, as many inquiries as one man in the field could well make. The transverse, or "cross-section", view which this report gives will be supplemented by a longitudinal view to be had by carrying many identical items forward in reports from year to year. The University hopes to have, in time, a considerable body of reliable information concerning all aspects of Colorado secondary education.

FRANK E. THOMPSON.

INTRODUCTION.

As suggested above, the data for the survey has been collected principally by personal visits to the schools. While all possible time and care were taken in making the blanks, it soon developed that without a lengthy book of instructions they were full of opportunities for misunderstanding. The few schools that were surveyed by mail gave us reason for accepting with some reservation the validity of results obtained by surveys carried on by mail. Four men filled out blanks on the ground. One surveyed one small school, another surveyed the five Denver high schools, a third surveyed sixteen schools, the fourth covered eighty-two four-year schools and twelve of less than four years. Less than a dozen four-year schools were covered by mail and for the majority of them the reports are fragmentary. Many short-course schools could be reached only by mail. North-Central-Association records and the reports in the offices of county superintendents have been utilized extensively.

Though a few sets of blanks have been filled by mail, apparently with the greatest of care, and though nearly all superintendents, principals, and teachers when visited and acquainted with the purpose of the survey have responded readily and cheerfully, there have been certain obstacles of a general character. First, schools are without any uniform system of keeping records. Statistics given on one basis in one school were not available in another because records were kept in a different form. For example, in one school the total enrollment for any month is obtainable as the number of students enrolled during that month; in another school the "total enrollment" is the total number enrolled during the year up to the time of reporting, and the total enrollment for no month except the first is kept separately.

Second, there is a paucity of records in many schools. School people often fail to see the possibilities of exact quantitative data for use in the study of education. Some were inclined to "guess off" the data for their schools. These "guesses" were checked up as far as possible; all mere estimates have been discarded.

Third, carelessness often marred the reliability of school records. One teacher kept attendance on an improvised record, since the board had not purchased a register. Another was "going to fix up her book after while"; records were then a month or more behind. Reports to a county superintendent in one case showed a large enrollment in the ninth grade for one month, but none for the rest of the year; it was the eighth grade entered by mistake under the ninth. One four-year high school showed an enrollment of 39 for the closing month of school, but had an aggregate attendance which gave a daily average of over 42. The superintendent's report for the same month showed 44 enrolled. Only in rare cases did the reports made by second- and third-class districts to the surveyor tally with the returns to

the county superintendent. All returns have been scrutinized for inconsistencies, and a number of letters have been sent out to verify doubtful data. After careful inquiries we have been obliged to accept, in a few instances, such data as "Enrollment—268, Average attendance—267" for the closing month of a large high school. Though work of this kind can not be made absolutely accurate, we have tried to make it sufficiently accurate for its general findings to be clearly trustworthy.

The report is divided into sections, and so far as suggestions are offered with reference to particular problems they are incorporated in the proper sections.

I. TERRITORIAL DISTRIBUTION.

It is pretty generally considered desirable that schools shall be conveniently near and this is always one of the first considerations in establishing any system of schools. Consolidation for the sake of better and cheaper schools has, on the other hand, always exerted a considerable influence. The two factors, interacting in some instances, and independent in others, have been responsible for very different distributions of high schools in various states. In the more densely settled East, each town (center of population) has come to maintain its own institution, and the towns are usually close enough together to serve the surrounding country very well. West and south, conditions are different, the country is sparsely settled, and provisions for consolidation are more common. In Ohio and Indiana there is the union district commonly supporting a high school, while the separate districts have nothing of the kind. In Illinois there is the township high school, an organization now spreading with great rapidity, though not legally confined to the unionization of integral townships by any means. In Kansas, Colorado, Montana and other western states the county has gained much prominence as a unit for general high-school purposes, while in Wisconsin it has been made a unit for schools of secondary grade devoted to the training of teachers or of farmers. In some parts of the South the congressional district has been recognized as an appropriate unit for the establishment of agricultural high schools. In Colorado, district, union and county units are all common; their legal status is set forth in Sections 139, 190-220 of the last edition of the School Law.

Discussion of the distribution of high-school advantages over the state is preceded by the tabulation of the high schools of various kinds given in Table 1.

TABLE 1.
HIGH SCHOOLS BY COUNTIES.

County.	— Kind of School. —				— Kind of School. —				
	County.	Union.	Dist.	Total.	Accred- ited.	4-Year Non- Accred- ited.	3-Yr.	2-Yr.	1-Yr.
Adams	1	4	5	1	1	..	1	2
Alamosa	2	2	1	1	..	..	..
Arapahoe	4	4	1	1	..	1	1
Archuleta	1	1	..	1	..	..	..
Baca
Bent	1	..	..	1	1	..	..	..	..
Boulder	7	7	4	..	..	1	2
Chaffee	2	2	1	1	..	..	..
Cheyenne	1	..	4	5	1	..	..	..	4
Clear Creek	3	3	2	..	..	1	..

TABLE 1.—Continued.

HIGH SCHOOLS BY COUNTIES.

County.	--Kind of School.--				Kind of School.				
	County.	Union.	Dist.	Total.	Accred- ited.	4-Year Non- Accred- ited.	3-Yr.	2-Yr.	1-Yr.
Conejos .....	..	..	2	2	..	1	..	1	..
Costilla .....	..	..	5	5	..	1	..	..	4
Crowley .....	..	..	5	5	1	3	..	..	1
Custer .....	..	..	..	..	..	..	..	..	..
Delta .....	..	..	7	7	2	4	1	..	..
Denver .....	..	..	5	5	5	..	..	..	..
Dolores .....	..	..	1	1	..	..	..	1	..
Douglas	1	..	2	3	1	..	..	..	2
Eagle	1	..	3	4	..	1	..	2	1
Elbert .....	..	3	2	5	..	1	2	..	2
El Paso .....	..	1	8	9	3	3	..	1	2
Fremont .....	..	..	4	4	3	..	..	..	1
Garfield	1	4	..	5	2	3	..	..	..
Gilpin .....	..	1	1	2	1	..	..	..	1
Grand .....	..	1	..	1	..	..	1	..	..
Gunnison	1	..	3	4	1	1	..	..	2
Hinsdale .....	..	..	1	1	..	1	..	..	..
Huerfano	1	1	..	2	1	1	..	..	..
Jackson	1	..	..	1	..	1	..	..	..
Jefferson .....	..	..	3	3	3	..	..	..	..
Kiowa .....	..	..	3	3	..	..	..	3	..
Kit Carson .....	..	..	5	5	..	1	1	2	1
Lake .....	..	..	1	1	1	..	..	..	..
La Plata .....	..	..	6	6	1	..	1	3	1
Larimer .....	..	..	14	14	3	2	..	2	7
Las Animas .....	..	..	4	4	1	..	1	..	2
Lincoln .....	..	2	4	6	..	2	..	1	3
Logan	1	3	4	8	1	3	..	..	4
Mesa .....	..	2	8	10	3	4	1	2	..
Mineral	1	..	..	1	..	1	..	..	..
Moffat .....	..	..	1	1	..	1	..	..	..
Montezuma .....	..	..	3	3	..	2	..	..	1
Montrose	2 (One branch)	..	1	3	1	1	..	..	1
Morgan .....	..	1	2	3	2	..	..	1	..
Otero .....	..	1	4	5	3	1	..	1	..
Ouray	2 (One branch)	..	..	2	1	..	1	..	..
Park .....	..	..	..	..	..	..	..	..	..
Phillips	1	..	..	1	1	..	..	..	..
Pitkin .....	..	..	3	3	1	..	..	..	2



TABLE 4.—Concluded.

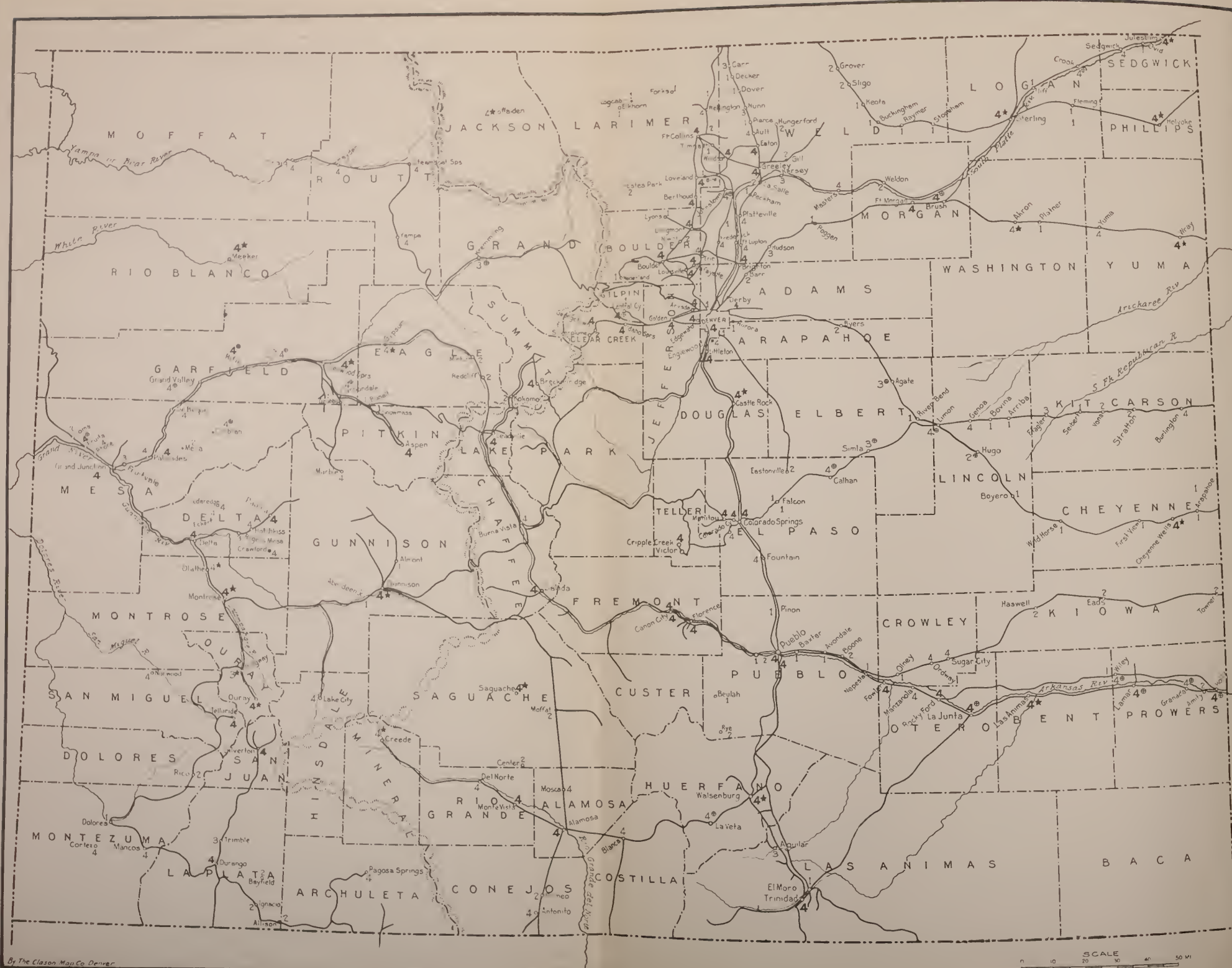
HIGH SCHOOLS BY COUNTIES.

County.	--Kind of School.--				Kind of School.				
	County.	Union.	Dist.	Total.	Accred- ited.	4-Year Non- Accred- ited.	3-Yr.	2-Yr.	1-Yr.
Prowers .....	..	4	1	5	2	2	..	1	..
Pueblo .....	..	..	11	11	2	..	..	3	6
Rio Blanco	1	..	..	1	1	..	..	..	..
Rio Grande.....	..	..	2	2	1	1	..	..	..
Routt .....	..	..	3	3	..	3	..	..	..
Saguache	1	..	2	3	1	..	..	2	..
San Juan .....	..	..	1	1	1	..	..	..	..
San Miguel .....	..	..	2	2	1	1	..	..	..
Sedgwick	1	..	2	3	1	1	..	..	1
Summit .....	..	..	2	2	1	..	..	1	..
Teller .....	..	..	2	2	2	..	..	..	..
Washington	1	..	1	2	..	1	..	..	1
Weld .....	..	1	31	32	3	7	4	5	13
Yuma	1	..	1	2	1	1	..	..	..
	20(Two brnchs)	26	203	249	71	61	13	36	68
Deduct counted twice .....	..	..	2	2	1	1	..	..	..
	20(Two brnchs)	26	201	247	70	60	13	36	68

County high schools enjoy the best standing as a class: 14 of them are accredited, 4 independent ones and 1 branch offer a four-year, non-accredited course, and 1 branch offers only three years. Union high schools come next: 7 are accredited, 15 offer four years of non-accredited work, 3 offer three years, and 1 offers two years. The district schools come last: 49 are accredited, 40 offer four years of non-accredited work, 9 offer three years, 35 offer two years, and 68 offer one year.

The different schools are designated as to their educational standing and legal status on the accompanying map. The years of high-school work offered are shown by the numerals 1, 2, 3 and 4. Accredited schools are distinguished by figures in heavy-face type. Legal organization is indicated by the use of small characters slightly above and to the right of the numbers, the star (★) standing for county schools, and the cross within the small circle (⊕) for union schools. The simple number is used for district schools.

A study was made of the accessibility of these schools to the children of the state by describing circles of ten miles radius about each accredited school, and again about each four-year school. A similar procedure was followed, using a radius of twenty-five miles, then one of fifty miles. For each



of the six maps thus made three items were calculated: (1) the number of counties which lay wholly within the arcs, (2) the approximate number of square miles included by them, (3) the number of post-offices found inside of them. The results are given in Table 2.

TABLE 2.

Miles from Accredited School.	Entire Counties.	Approximate Number of Square Miles.	Per Cent of Area of State.	Number of Post-offices.	Per Cent of all Post-offices of the State.
10 or less.....	1	15,535	14.9	262	30.2
25 or less.....	11	61,845	59.5	612	70.6
50 or less.....	46	90,180	86.8	802	92.5
Miles from Four-year School.					
10 or less.....	1	26,910	25.9	388	44.8
25 or less.....	16	79,535	76.5	756	87.2
50 or less.....	59	99,710	96.	855	96.8

That less than one-sixth of the area of the state is within ten miles of an accredited high school and not much over a half within twenty-five miles of such a school proves that distance is a great difficulty, even an insurmountable one, for many young people of high-school age. But probably no other means offers a better idea of the extent to which children live at long distances from high schools than the figures on post-offices in Table 2, since post-offices argue for a population, whereas mere square miles do not. It is true that the Federal Census for 1910 gives population by corporate cities and towns and by voting precincts, but there is no way of getting definitely at the distribution of this population over the whole county. So far as population is not centered in towns and cities, it tends to cluster about them, or along streams, or near railroads. Counties with a varied topography, like Mesa, Boulder, and Las Animas, have a very unevenly distributed rural population. Over half the accredited schools and about a fifth of the North-Central-Association schools are in the rural sections according to the Census of 1910, but each of them is in a center of population nevertheless. In each of five counties outside of Denver, viz., Lake, Mineral, Rio Blanco, San Juan, and San Miguel, over half the teachers of the county are employed in one town or city school. For such reasons it would be misleading to assume that the "rural population" (that found outside of cities of 2,500 or over) is equally distributed over the entire county and to use uniform shading or hatching to represent the fact. The statistics on post-offices, therefore, must be given much weight.

On the other hand, straight-line distances as measured off by the arcs may give no adequate conception of the miles which children have to travel to get to school. This must be borne in mind especially in studying the distribution of schools in mountain counties. The distance in an air-line may be two miles, by the road it may be ten. Paradox in Montrose County appears on the map between 55 and 60 miles from its county high school,

but its pupils must travel 52 miles by rail and 75 miles by stage to take advantage of the facilities for which their fathers pay a tax. Marble appears 40 miles from its county high school at Gunnison, but no cross-country journey is possible except in July and August. For the remainder of the year a rail trip of 226 miles and about 24 hours is necessary.¹ So serious is this problem of distance that six four-year schools and four two-year schools are being supported by double taxation in counties having county high schools.

Another consequence of distance is that high schools are maintained by districts that have not the right to do so under the school law, because they are in the third class. Two accredited schools and over two-thirds of the non-accredited four-year schools fall into this class.

One point to be kept in mind is that the data of Table 2 indicate the distance of territory and post-offices from any high school of a certain kind. But it happens that hundreds of high-school students reside nearer another high school than their own. Many boards pay no heed to the statute that directs such students to attend the "more accessible" school at the cost of their own district. Distance from one's own school is not a serious obstacle in districts of the ordinary sort, in a very few union schools only is it serious, but the larger territory subject to the county high school demands that it be recognized and carefully studied in this growing type of school. To that end Table 3 for county high schools only has been prepared. It follows Table 2 in its general plan:

TABLE 3.

A. TEN MILES OR LESS FROM COUNTY HIGH SCHOOL.

County.	Square Miles of Area.	Per Cent of Area of County.	Number of Post-offices.	Per Cent of Post- offices of County.
Bent	314	21.	1	12.5
Cheyenne	314	18.	3	30.
Douglas	314	35.	3	30.
Eagle	314	20.	2	12.5
Gunnison	314	10.	2	9.
†Huerfano	314	20.	12	55.
Jackson	314	18.	2	25.
Logan	314	18.	3	16.
Mineral	280	32.	4	100.
*Montrose	465	20.	3	20.
Ouray	260	47.	4	57.
Phillips	310	46.	3	75.
Rio Blanco	314	10.	1	12.5
Saguache	314	11.	1	7.
Sedgwick	190	35.	2	67.
Washington	314	13.	2	8.
Yuma	300	13.	2	11.

† Huerfano County also is entitled to a slightly better rating than the figures given, since the La Veta Union High School is not a part of the county unit.

* The full-fledged branch at Olathe was also made a center for a circle.

TABLE 3.—Concluded.

B. TWENTY-FIVE MILES OR LESS FROM COUNTY HIGH SCHOOL.

County.	Square Miles of Area.	Per Cent of Area of County.	Number of Post-offices.	Per Cent of Post- offices of County.
Bent	1,175	78.	6	75.
Cheyenne	1,229	69.	6	60.
Douglas	874	98.	10	100.
Eagle	1,134	72.	12	75.
Gunnison	1,568	48.	17	73.
Huerfano	1,069	70.	20	91.
Jackson	1,555	91.	8	100.
Logan	1,353	78.	16	84.
Mineral	730	83.	4	100.
*Montrose	1,340	59.	8	53.
Ouray	532	96.	7	100.
Phillips	677	100.	4	100.
Rio Blanco	1,479	46.	5	62.5
Saguache	1,900	69.	12	86.
Sedgwick	535	100.	3	100.
Washington	1,473	59.	17	68.
Yuma	1,336	58.	8	44.

Tuition students are numerous because of the sparse population and the long distances. While the law on liability of a district for a student's tuition to a district supporting a high school (provided his own does not), or to a district with a high school more accessible than his own is plain enough for any willing person to understand, many boards show their willingness to misunderstand by refusing to pay the tuition. The district affording the education is then forced to choose between schooling non-residents free of charge, and excluding them on the ground of lack of room. To the credit of our people it must be said that the former alternative is the almost invariable choice. No county high school charges tuition, and several ordinary districts waive the privilege. As a result it is impossible to learn the actual number of students attending high school outside their own districts. Incomplete returns give over 900 attending 36 accredited schools and 33 non-accredited ones. The rates paid by parents or district, or remaining unpaid, are \$2.50 per month in 40%, \$2 in 15%, \$3 in 10% of the cases. Charges run from \$1 up to \$5 and over in both accredited and non-accredited schools, the tendency being toward the higher figure in accredited schools, perhaps as a result of the recent amendment of the state law. The maximum charge is \$6.50 per month, and is made by an accredited school.

* The full-fledged branch at Olathe was also made a center for a circle.

Garfield County High is not included in this table because two-thirds of the districts and the majority of the school population come within four union high schools which are not a part of the county high-school district. The high school at La Junta is also omitted. Populous though not extensive parts of Otero County are not included in it. Its real status is uncertain. No one seems to know what type of high school it is legally.

II. FINANCIAL SUPPORT.

Support may be viewed from three different angles: (1) the rate of taxation borne for school and other purposes, (2) the actual amounts being expended to maintain the school, (3) the disbursements, past and present, for equipment, principally non-perishable, to be used in instruction.

A. THE TAX RATE.

For the study of tax rates the schools are divided into different classes in much the same manner as is done under succeeding sections of this report. County, union and district schools are studied separately, with subdivisions of each class into (1) North Central, (2) other accredited, (3) non-accredited 4-year, and short-course high schools. The reasons dictating a separate consideration of these classes of schools can not be discussed here, but they will appear sufficient after even a casual study.

TABLE 4.

TAX RATES FOR ALL SCHOOL PURPOSES IN ORDINARY AND CONSOLIDATED DISTRICTS.

Mills.....	Under 1	1-2	2-3	3-4	4-5	5-6	6-7
North Central .....	..	..	..	..	1	1	5
Other Accredited .....	..	..	..	1	2	2	3
Non-Accredited 4-Year	1	..	..	2	2	6	6
Three-Year .....	..	..	..	2	..	2	..
Two-Year .....	..	2	..	1	4	4	7
One-Year .....	..	1	2	14	6	9	13
11 and							
Mills.....	7-8	8-9	9-10	10-11	over	Total	
North Central	10	3	2	..	3	25*	
Other Accredited	2	5	2	..	1	18	
Non-Accredited 4-Year	6	7	3	1	4	38	
Three-Year	1	1	1	..	..	7	
Two-Year	4	..	3	..	1	26	
One-Year	2	3	..	1	1	52	

TAX RATES FOR ALL SCHOOL PURPOSES IN UNION DISTRICTS.

Mills.....	Under 1	1-2	2-3	3-4	4-5	5-6
North Central	1
Other Accredited	3
Non-Accredited 4-Year	1	2	5
Short-Course	1	1	1	..

* Denver schools are disregarded. School tax in different parts of the Denver district varies from 3.85 to 5.35 mills, which is considerably below the general tendency for North-Central-Association schools. Cripple Creek and Victor are tallied as one, because they are under the control of one district.

Mills.....	6-7	7-8	8-9	9-10	10-11	Total
North Central .....	..	1	..	..	..	2 $\frac{1}{2}$
Other Accredited .....	..	..	..	..	1	4
Non-Accredited 4-Year	3	2	1	..	1	15
Short-Course	1	..	..	..	..	4

The rates for education in county districts are much lower owing to the exclusion of local district rates. These latter vary greatly because they are levied by all sorts of districts, rich and poor, urban and rural. The local rates were consulted for union schools, because theoretically at least the districts composing a union are somewhat on a level in educational sentiment, since each separately has voted favorably on the union proposition.

TABLE 5.

TAX RATES FOR ALL COUNTY SCHOOL PURPOSES IN COUNTY HIGH-SCHOOL DISTRICTS.

Mills.....	1-1.25	1.25-1.5	1.5-1.75	1.75-2.	2-2.25
North Central .....	..	..	..	1	1
Other Accredited	1	2	2	2	..
Non-Accredited 4-Year	3	1	..	..	..

Mills	2.25-2.5	2.5-2.75	2.75-3.	3&over	Total
North Central .....	..	..	..	..	2
Other Accredited	4	1	..	..	12
Non-Accredited 4-Year .....	..	..	..	1	5

The two measures of central tendency in distribution of these series that are of most significance are the median and the mode. Medians and modes for Tables 4 and 5, are given in Table 6.

TABLE 6.

CENTRAL TENDENCIES OF TAX RATES FOR ALL SCHOOL PURPOSES.

Schools.	Ordinary and Consolidated Districts.		Union Districts.		County Districts.	
	Median.	Mode.	Median.	Mode.	Median.	Mode.
North Central	7.55	7-8	6.5	(?)	2.	(?)
Other Accredited	7.5	8-9	5.7	5-6	1.87	2.25-2.5
Non-Accredited 4-Year..	7.3	8.9	5.9	5-6	1.22	1-1.25
Three-Year	5.75	(?)	4.	(?)	...	.....
Two-Year	6.3	6-7	..	..	...	.....
One-Year	5.3	3-4	..	..	...	.....

The interrogation point indicates no well defined mode, but a reference to the preceding tables will make clear the prevailing measures.

† Otero County Union is not considered here because it is practically a county high school. The rate taken for local purposes in a union district is the average of the local rates in the districts composing the union.

In general one must follow down to the short-course schools before he finds a diminution in the willingness of the community to tax itself for schools, though a falling off is apparent in the non-accredited class among county schools.

The total rate of tax paid by any district for schools, however, is not exactly representative of its sentiment for education. The rate for county "general" and county "high school" is largely fixed by outsiders, so far as any one district is concerned, except in a few counties where one district dominates the whole. For this reason the rates voluntarily imposed by the districts upon themselves have been presented in Table 7.

TABLE 7.

SELF-IMPOSED RATES FOR SCHOOL PURPOSES IN ORDINARY AND CONSOLIDATED

DISTRICTS.

Mills	Under 1	1-2	2-3	3-4	4-5	5-6	6-7
North Central .....	..	..	..	2	1	3	9
Other Accredited .....	..	..	..	4	2	2	2
Non-Accredited 4-Year	1	..	3	2	2	7	9
Three-Year .....	..	..	1	1	..	3	..
Two-Year	1	1	2	2	5	6	6
One-Year	1	6	12	4	12	9	2
11 and							
Mills.....	7-8	8-9	9-10	10-11	over	Total	
North Central	4	3	1	2	..	25	
Other Accredited	3	3	1	..	1	18	
Non-Accredited 4-Year	5	5	1	3	..	38	
Three-Year	1	1	..	..	..	7	
Two-Year	1	1	..	..	1	26	
One-Year	4	1	..	..	1	52	

SELF-IMPOSED RATES FOR SCHOOL PURPOSES IN UNION DISTRICTS.

Under

Mills.....	1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	Total
North Central	1	..	1	..	..	2
Other Accredited	2	1	..	..	1	4
Non-Accredited 4-Year....	1	3	4	4	..	2	1	15
Short-Course	1	1	1	..	1	..	..	..	4

SELF-IMPOSED RATES FOR HIGH-SCHOOL PURPOSES IN COUNTY DISTRICTS.

Mills.....	.5-.75	.75-1.	1.-1.25	1.25-1.5	1.5-1.75	1.75-2.	Total
North Central .....	..	..	1	1	..	..	2
Other Accredited	4	3	1	..	2	2	12
Non-Accredited 4-Year	3	1	..	..	..	1	5

TABLE 8.

CENTRAL TENDENCIES OF SELF-IMPOSED RATES FOR SCHOOL PURPOSES.

Schools.	Ordinary and Consol- idated Districts.		Union Districts.		County Districts.	
	Median.	Mode.	Median.	Mode.	Median.	Mode.
North Central	6.75	6-7	5.5	(?)	1.25	(?)
Other Accredited	6.5	3-4	5.1	4-5	.9	.5-.75
Non-Accredited 4-Year.	6.45	6-7	4.9	4-6	.7	.5-.75
Three-Year	5.5	5-6	3.	(?)	..	....
Two-Year	5.3	5-7	..	..	..	....
One-Year	4.25	2-5	..	..	..	....

Table 8 shows a pretty distinct decline in the feeling of responsibility for good schools from North-Central-Association down, though no great break is discernible until the short-course schools are reached.

One striking fact should be mentioned with reference to the union schools, of which it was said above that *theoretically* they are composed of districts with comparable educational standards. In practice, it is found that different parts of a union district tax themselves very differently for local elementary schools. Slightly over half of the union districts include territory that taxes itself over twice as heavily as other parts of the same union district. The four districts in which the widest variation occurred showed the following maximum and minimum rates as borne by different portions of the district:

	Maximum.	Minimum.
Mills	2.1	.5
Mills	4.3	1.0
Mills	12.0	2.0
Mills	13.17	1.97

Comparisons of the mere tax rates for schools in different communities may be objected to on the ground that some districts are poorer in assessed valuation and richer in children than others, and hence must maintain higher school rates than their neighbors, even while supporting poorer schools. When the burden becomes especially heavy, talk of retrenchment becomes rife. Then comes the problem of where to retrench. Shall the schools suffer, or shall it be the streets? Good social policy dictates a fair division of revenues, whether they be scanty or otherwise, between the educational endeavors and the other social undertakings of the group. To bring this point out more plainly Tables 9 and 10 have been made to show the ratio between the total rate for education and that for county and state non-educational purposes. Municipal rates are not included, since hardly any school districts coincide with municipalities.

TABLE 9.

RATIO OF TOTAL RATE FOR SCHOOLS TO RATE FOR OTHER COUNTY AND STATE PURPOSES.

Ordinary and Consolidated							
Districts:	Under .5	.5-1.	1-1.5	1.5-2.	2-2.5	2.5-3.	Total
North Central	3	5	13	4	1	..	26
Other Accredited	1	8	6	2	1	..	18
Non-Accredited 4-Year.....	3	6	22	6	1	..	38
Three-Year .....	..	3	1	1	1	1	7
Two-Year	3	8	11	3	1	..	26
One-Year	6	27	19	..	1	1	54
Union Districts:							
North Central .....	..	1	1	..	..	..	2
Other Accredited .....	..	4	..	..	..	..	4
Non-Accredited 4-Year.....	..	6	8	1	..	..	15
Short-Course	2	1	1	..	..	..	4
County Districts:							
	Under .25			.25-.50		.50-.75	Total
North Central	1			1		..	2
Other Accredited	5			6		1	12
Non-Accredited 4-Year	4			..		1	5

TABLE 10.

CENTRAL TENDENCIES OF RATIOS OF TOTAL TAX RATES FOR SCHOOLS TO RATIOS FOR OTHER COUNTY AND STATE PURPOSES.

Schools.	Ordinary and Consolidated Districts.		Union Districts.		—County Districts.—	
	Median.	Mode.	Median.	Mode.	Median.	Mode.
North Central	1.2	1-1.5	1.	(?)	.25	(?)
Other Accredited	1.	.5-1.	.75	.5-1.	.29	.25-.5
Non-Accredited 4-Year...	1.22	1-1.5	1.1	1-1.5	.15	Under .25
Three-Year	1.25	.5-1.	.55	Under .5	..	..
Two-Year	1.08	1-1.5	..	..	..	..
One-Year .....	.89	.5-1.	..	..	..	..

Less diversity is apparent between schools when examined from this point of view than when compared as to their gross rates of taxation. In general, the smaller schools hold up toward the level of the larger ones or surpass it. They seem not so much to be less liberally inclined toward their schools as to have a habit of keeping tax rates low for all purposes. Only short-course and non-accredited county schools fall much below the better ones.

B. COST OF OPERATION.

Other things being equal, that school which economizes the salaries of teachers, crowds classes, and provides a plant without modern conveniences or equipment, must be less efficient than its neighbor who pursues the opposite policy in these directions. This difference in efficiency is indicated quantitatively with considerable accuracy, unless a lack of wisdom prevails

in expenditures, by the cost of operation per student. In the figures below, cost of operation is interpreted to mean the actual cost of running, the \$1,000,000 which is gone at the end of the year without leaving anything that can be inventoried. It excludes permanent improvements, non-perishable apparatus, books, payments or interest on bonds, sinking fund, interest on investment, etc.

TABLE 11.

COST OF OPERATION PER STUDENT IN AVERAGE ATTENDANCE.*

Ordinary and Consolidated

Districts:

	Under \$40	\$40-50	\$50-60	\$60-70	\$70-80	\$80-90	\$90-100
North Central .....	..	2	4	7	4	2	..
Other Accredited .....	..	3	3	4	3	1	..
Non-Accredited 4-Year... 1	1	1	3	3	5	2	4
Three-Year .....	..	1	..	..	..	..	..
Two-Year .....	..	..	1	1	..	1	1
	\$100-110	\$110-120	\$120-130	\$130-140	\$140-150	\$150-160	
North Central	1	..	..	..	..	..
Other Accredited .....	..	2	..	..	1	..	
Non-Accredited 4-Year. ..	..	3	..	2	..	..
Three-Year	1	..	..	..	..	..
Two-Year .....	..	..	..	1	..	..

Union Districts:

	Under \$40	\$40-50	\$50-60	\$60-70	\$70-80	\$80-90	\$90-100
North Central	2	..	1	..	..	..
Other Accredited	2	2	..	..	..
Non-Accredited 4-Year.... 1	1	1	1	3	2	1	..
Short-Course	1	..	1
	\$100-110	\$110-120	\$120-130	\$130-140	\$140-150	\$150-160	
North Central	
Other Accredited	
Non-Accredited 4-Year.	1	..	..	..
Short-Course	1

County Districts:

	Under \$40	\$40-50	\$50-60	\$60-70	\$70-80	\$80-90	\$90-100
North Central.....	1	..	..	1	..
Other Accredited	2	..	2	2	2
Non-Accredited 4-Year...	1	1	..	..	1	1
	\$100-110	\$110-120	\$120-130	\$130-140	\$140-150	\$150-160	
North Central	
Other Accredited	3	..	1	..	..	..
Non-Accredited 4-Year.	1	..	1	..	

* *Average Attendance* is the average of attendance for first, fifth and closing months of the year.

Even the wide range of this table fails to present the full difference in cost per student in our high schools. Small union schools in villages prove very costly. One at Crook runs to \$186 per student in average attendance for the year, a three-year school at Agate runs to \$191, and a four-year school at Limon to \$213. But the Atwood Union High, with an annual cost of \$1,075 and three students in average attendance, leads all with a cost of \$358 per student.

TABLE 12.

CENTRAL TENDENCIES OF COST OF OPERATION PER STUDENT IN AVERAGE ATTENDANCE.

Schools.	Ordinary and Consolidated Districts.		Union Districts.	
	Median.	Mode.	Median.	Mode.
North Central	\$67.25	\$60-70	\$47.50	\$40-50
Other Accredited	66.25	60-70	60.	(?)
Non-Accredited 4-Year	78.	70-80	66.70	60-70
Short-Course	85.	(?)	85.	(?)

Schools.	County Districts		All Districts.	
	Median.	Mode.	Median.	Mode.
North Central	\$70	(?)	\$63.75	\$60-70
Other Accredited	90	\$100-110	71.	50-60
Non-Accredited 4-Year	90	100-110	74.40	70-80
Short-Course .....	..	.....	85.	(?)

With a single minor exception, the lower the classification of the school, the greater the cost per student. This is not because small schools are more efficient than large ones or because money is wasted in small schools. Large-scale production is cheaper in education as well as elsewhere. The teacher, not the student, is approximately the unit of cost, until a certain size of school is reached. One might also infer from Table 12 that the union school is the cheapest sort, the county the dearest. First, however, let the schools be tabulated with reference to their average attendance.*

TABLE 13.

COST OF OPERATION PER STUDENT IN AVERAGE ATTENDANCE.

Ordinary and Consolidated

Districts:

		Under \$40	\$40-50	\$50-60	\$60-70	\$70-80	\$80-90	\$90-100
Av. Att. less than 10....	..	2	..	..	..	..	..	..
" " 10-25 .....	..	..	..	3	3	2	2	
" " 25-50	1	2	2	2	4	2	2	
" " 50-100 .....	..	1	4	2	3	..	..
" " over 100 .....	..	3	3	8	1	2	..	

* *Average Attendance* is the average of attendance for first, fifth and closing months of the year.

TABLE 13.—Concluded.

	\$100-110	\$110-120	\$120-130	\$130-140	\$140-150	Over \$150
Av. Att. less than 10..	..	..	..	..	..	..
" " 10-25	1	3	..	2	1	..
" " 25-50	1	1	..	..	..	..
" " 50-100	1	1	..	..	..	..
" " over 100 .....	..	..	..	..	..	..

Union Districts:

	Under \$40	\$40-50	\$50-60	\$60-70	\$70-80	\$80-90	\$90-100
Av. Att. less than 10....
" " 10-25	1	2	2	1	1
" " 25-50	1	1	..	2	1	..	..
" " 50-100	1	1	..	..	..
" " over 100	2	1	1	..	..	..

	\$100-110	\$110-120	\$120-130	\$130-140	\$140-150	Over \$150
Av. Att. less than 10..	4
" " 10-25	1	..	..	1
" " 25-50
" " 50-100
" " over 100

County Districts:

	Under \$40	\$40-50	\$50-60	\$60-70	\$70-80	\$80-90	\$90-100
Av. Att. less than 10....
" " 10-25	1
" " 25-50	1	..	..	1	2	2
" " 50-100	1	..	..	..	..
" " over 100	1	..	..	..	..	1

	\$100-110	\$110-120	\$120-130	\$130-140	\$140-150	Over \$150
Av. Att. less than 10..	..	..	..	..	..	..
" " 10-25 .....	..	..	1	..	1	..
" " 25-50	1	..	1	..	..	..
" " 50-100	1	..	..	..	..	..
" " over 100 .....	..	..	..	..	..	..

TABLE 14.

CENTRAL TENDENCIES OF COST OF OPERATION PER STUDENT IN AVERAGE ATTENDANCE.

Schools.	Ordinary and Consolidated Dists.		Union Districts.	
	Median.	Mode.	Median.	Mode.
Av. Att. less than 10.....	\$47.50	\$40-50	\$190.	(?)
" " 10-25	92.50	(?)	77.50	(?)
" " 25-50	73.75	70-80	62.50	\$60-70
" " 50-100	65.	50-60	60.	(?)
" " over 100	63.10	60-70	51.25	40-50

TABLE 14.—Concluded.

Schools.	County Districts.		All Districts.	
	Median.	Mode.	Median.	Mode.
Av. Att. less than 10.....	.....	....	\$158.	\$40-50
“ “ 10-25	\$125.	(?)	90.	(?)
“ “ 25-50	90.	(?)	75.	70-80
“ “ 50-100	75.	50-60	66.70	50-60
“ “ over 100	80.	(?)	61.65	60-70

Table 14 shows conclusively that the expenditures of county schools are most generous, and those of union schools least so.

The cost of the high school may also be examined, and justly so, by way of the grades. The question of justice between grades and high school is not a small one. In places, sentiment for a high school is almost pathologically strong, in others it is pathologically weak. In some places the elementary school is stripped of support for the sake of a high school. While it is not possible at present to lay down rules for the precise adjustment of grades and high school financially, it may be of interest to set out the existing relations of the two in districts where high schools are maintained.

TABLE 15.

RATIO OF COST OF HIGH SCHOOL TO COST OF GRADES, BY SCHOOLS.

Aggregate Cost:	.20-.30	.30-.40	.40-.50	.50-.60	.60-.70	.70-.80	.80-.90	.90-1.00
Av. Att. less than 25..	2	3	5	1	3	2	1	..
“ “ 25-50	2	5	5	2	1	1	1	1
“ “ 50-100	2	1	3	6	..	1	..	..
“ “ over 100 ..	5	4	3	3	1	..	..	..

Cost Per Student in Av. Attendance: Under 1.5 1.5-2. 2.-2.5 2.5-3. 3.&over

Av. Att. less than 25 .....	..	1	4	3	3
“ “ 25-50	1	4	5	3	4
“ “ 50-100	2	4	3	1	1
“ “ over 100	4	3	3	..	..

TABLE 16.

CENTRAL TENDENCIES OF RATIOS OF COST OF HIGH SCHOOL TO COST OF GRADES.

Schools.	Aggregate Cost.		Cost per Student in Average Attendance	
	Median.	Mode.	Median.	Mode.
Av. Att. less than 25 .....	.47	.40-.50	2.58	2.-2.5
“ “ 25-50 .....	.44	(?)	2.3	2.-2.5
“ “ 50-100 .....	.51	.50-.60	1.94	1.5-2.
“ “ over 100 .....	.375	.20-.30	1.72	1.5-2.

The cost of a short-course school necessarily will bear a less ratio to that of its elementary school than is the case with a four-year school. For four-year schools the ratio can not be expected to remain constant for large and small schools. The grades reach the point of stationary or diminishing expenditure per pupil before the high school can do so, in most cases

before the high school is in existence in the district. The larger the high school, the smaller, normally, should be the ratio of high school to grade cost, both in the aggregate and per student in average attendance, until a high school has some half dozen teachers at least.

Tables 15 and 16 conform to this theory, except for the schools with an attendance between 50 and 100. At this stage the high school apparently ceases to be regarded as a formal organization merely, and demands for larger service and higher efficiency are made upon it. A more diversified curriculum, better equipment, a more highly paid and carefully selected teaching force are among the items of added expense. That this is the point at which schools usually become anxious for the accredited relation is also worth noting. Perhaps no better index could be found of the influence of the current system of accrediting. When a school rises far above the median of its class in this table, it may mean an over-emphasis of the high school, or poor standards in the grades; when it falls far below the median, an inefficient high school is the most likely explanation.

C. INSTRUCTIONAL EQUIPMENT.

Another sign of a tendency to progress is the expenditure for permanent equipment. The amount spent in a certain year may be by way of atonement for negligence of long standing, and is not so important as that expenditures for improvements are regularly made. Outside Denver, Pueblo, Boulder and several small schools there was spent in 1913-14 for instructional apparatus over \$19,000, and for libraries \$5,600. The latter figure meant the addition of some 3,500 volumes. Very few short-course schools finished the year with a better equipment than that with which they began it, but about half the union schools and non-accredited district schools showed some growth. Accredited districts made some advance in a majority of the cases, and county schools almost without exception strengthened themselves. Apparatus not only cost more money than libraries, but it was given attention in some phase in several more schools than saw fit to increase their libraries.

The value of instructional equipment and the size of libraries in our high schools are expressed in large figures, even with rather incomplete returns. Over \$125,000 of apparatus has been provided. This is apportioned 30% to Physics, 25% to Chemistry, 12% to Manual Training, 11% to commercial branches, 10% to Biology, 8% to Domestic Science, 3% to Geology, and 2% to Physical Training.* This distribution does not show the relative cost of equipping for different subjects, since some are taught much more generally than others.

For accredited schools the typical equipment in Biology is valued at about \$150, for Chemistry at \$350, for Physics at a trifle less than \$350, for commercial branches at \$300, for Manual Training at \$400, for Domestic Science at \$500. These amounts it may be are somewhat above the minimum requisite to equip a young and growing school for standard work in

* For Manual Training, Domestic Science and commercial branches, the same equipment serves for both grades and high school. Figures here are the total for the entire school.

these lines. Very little apparatus for Agriculture exclusively has as yet been purchased by schools giving courses in that subject. A few schools have some historical maps and are not compelled in class work to rely upon small maps hidden in the text.

Not many schools have a gymnasium, and of those only a very few have invested much in apparatus for physical training. Logan County High School, however, has already placed in its gymnasium materials running into the thousands of dollars. Many school boards spend money annually on the support of athletics, but this is done principally by way of furnishing bats, balls and goals, or in meeting the deficit of the athletic association at the close of the season. The idea of purchasing baseballs by the dozen out of public money, and of passing them out one by one to the boys as the old balls were lost or worn out would have been curious indeed a decade ago; but the attitude is changing rapidly. Much greater generosity is prevented only by the feeling that management of and responsibility for athletics is an excellent training for the student body.

The libraries reported total 90,000 volumes. Over 30% of this is literature, poetry or fiction; 18% is history and biography; 5% is science, and 5% is reference. Ten per cent, listed as "Government Documents" and an equal amount as "Miscellaneous", is of very little worth.

Though there is a large absolute and relative increase in both library and apparatus each year, there is still much inadequacy of equipment. This would seem to be due to two causes: first, and chiefly, money is wasted; second, there is great inequality among schools.

As to the waste of money, much expensive apparatus is bought when simple pieces would suffice. The expensive pieces are often delicate, soon get out of order, and are not repaired. Some pieces are set aside by teachers who do not understand how to operate them. In the library many books listed as "Science" are only general texts, which students rarely consult. The number of reference books is encouraging, but many of them are out-of-date encyclopedias. Many sets for which fancy prices have sometimes been paid are of little value. There is a disposition to purchase histories in sets, histories often of the highest value to the research student and representative of the best that historical scholarship has done, but frequently of a style that does not attract high-school students. There are evidences that the fallacy that somehow there is virtue in just spending money on education still persists.

As to inequality of equipment, while the median of total equipment for accredited schools is well over \$1,000, four accredited schools have less than \$500 so invested. The median of the library of accredited schools is about 1,000 volumes, but thirteen accredited schools have a library of less than 500 volumes, and several of the thirteen are not in touch with any other facilities. In the non-accredited schools conditions are generally poor with reference to Physics and Chemistry, the only laboratory sciences regularly taught. Twelve schools giving Physics and five giving Chemistry have outfits of less value than \$100 for each.

III. THE STUDENT BODY.

The general facts regarding the size, class and sex distribution of the enrollment of our high schools appear in Tables 17 and 18. The data is incomplete through the omission of a few short-course schools, one small non-accredited four-year school, and the Central High School of Pueblo. Failure of totals to tally from left to right is due to the failure of some schools to report by classes or by sexes, and to the ignoring in these summaries of about two per cent of the student body, who are reported as "Special" or "Unclassified".

A. TOTAL ENROLLMENT.

About 17,000 students, or approximately seven per cent of the school population, were enrolled in Colorado high schools in 1913-14. In round numbers, 25% were in Denver, 45% in other North-Central-Association schools, 15% in the remaining accredited schools, and over 10% in non-accredited four-year schools. About one student in 25 is carrying on his work in a school offering less than the customary four years. Not over 15% of the enrollment lies outside of accredited schools.

In comparison with the ordinary (plus the few consolidated) districts, county and union schools are still of minor importance. None of the fifteen largest cities of the state are in either a union or a county district, and several of the counties with largest population have no union district within their borders. County and union schools, nevertheless, are increasing in number. A census five years from the present will doubtless show a further increase in number and a material growth in enrollment, especially for county schools. These two classes of schools are of interest principally because they stand for educational extension from the standpoint both of territory and curriculum.

TABLE 17.
TOTAL ENROLLMENT.

SCHOOLS.	9th Year			10th Year			11th Year			12th Year			Total		
	B		All	B		All	B		All	B		All	B		All
	G	All		G	All		G	All		G	All		G	All	
Ordinary and Cons. Districts.....	1609	1720	5071	930	1268	3771	626	924	2580	426	711	2020	3684	4716	13659
Denver .....	...	...	1452	...	...	1349	...	...	861	...	...	...	750	2002	2410
Other North Central.....	1043	1073	2353	625	895	1660	444	642	1246	275	489	891	2422	3109	6235
Other Accredited	219	234	453	123	149	272	94	154	248	91	122	213	545	680	1225
Non-Accredited 4-Year	211	246	478	144	195	361	84	113	206	60	100	166	505	666	1256
Three-Year	21	24	45	12	14	26	4	15	19	...	...	...	51	63	114
Two-Year	43	62	137	26	45	93	...	...	...	...	...	...	89	117	264
One-Year	72	81	153	...	...	...	...	...	...	...	...	...	72	81	153
Union Districts	226	295	521	132	177	309	91	134	225	66	116	182	534	742	1276
North Central	84	115	199	54	60	114	49	54	103	33	45	78	222	278	500
Other Accredited	55	59	114	27	43	70	24	33	57	16	34	50	139	184	323
Non-Accredited 4-Year	70	96	166	47	56	103	16	45	61	17	37	54	150	234	384
Short-Course	17	25	42	4	18	22	2	2	4	...	...	...	23	46	69
County Districts	250	306	568	173	211	395	101	160	268	105	159	267	655	864	1552
North Central	33	32	65	30	31	61	13	13	26	14	19	33	90	95	185
Other Accredited	182	221	403	127	156	283	78	130	208	82	126	208	493	659	1152
Non-Accredited 4-Year	35	53	100	16	24	51	10	17	34	9	14	26	72	110	215
TOTALS	2085	2321	6160	1235	1656	4475	818	1218	3073	597	986	2469	4873	6322	16487
North Central, except Denver..	1160	1220	2817	709	956	1845	506	709	1375	322	553	1002	2734	3482	6920
Other Accredited	456	514	970	277	348	625	196	317	513	189	282	471	1177	1523	2700
Non-Accredited 4-Year	316	395	744	207	275	515	110	175	301	86	151	246	727	1010	1855
Short-Course	153	192	377	42	77	141	6	17	23	...	...	...	235	307	600

TABLE 18.
PER CENT OF TOTAL ENROLLMENT.

SCHOOLS.	9th Year		10th Year		11th Year		12th Year		Total					
	B	G	All	B	G	All	B	G	All	B	G			
Ordinary and Consol. Districts.....	19.6	20.9	40.1	11.3	15.4	26.8	7.6	11.2	19.1	5.2	8.7	14.1	43.9	56.1
Denver .....	...	...	32.9	...	...	30.6	...	...	19.5	...	...	17.	45.4	54.6
Other North Central.....	19.1	19.7	38.3	11.4	15.9	27.	8.1	11.8	20.3	5.	9.	14.5	43.9	56.1
Other Accredited	18.5	19.7	38.2	10.4	12.6	22.9	7.9	13.	20.9	7.7	10.3	18.	44.5	55.5
Non-Accredited 4-Year	18.3	21.3	39.5	12.5	16.9	29.8	7.3	9.8	17.	5.2	8.7	13.7	43.1	56.9
Three-Year	23.3	26.7	50.	13.3	15.6	28.9	4.4	16.7	21.1	...	...	...	44.7	55.3
Two-Year	24.4	35.2	59.6	14.8	25.6	40.4	...	...	...	...	...	...	43.2	56.8
One-Year	47.1	52.9	...	...	...	...	...	...	...	...	...	...	47.1	52.9
Union Districts	18.3	23.8	42.1	10.7	14.3	25.	7.4	10.8	18.2	5.3	9.4	14.7	41.8	58.2
North Central	17.	23.3	40.3	10.9	12.1	23.	10.	10.9	20.9	6.7	9.1	15.8	44.4	55.6
Other Accredited	18.9	20.3	39.2	9.3	14.8	24.1	8.2	11.3	19.5	5.5	11.7	17.2	43.	57.
Non-Accredited 4-Year	18.2	25.	43.2	12.2	14.6	26.8	4.2	11.7	15.9	4.4	9.6	14.	39.	61.
Short-Course.....	(Basis of Comparison too small to be significant).													
County Districts	17.1	20.9	37.9	11.8	14.5	26.4	6.9	10.9	17.9	7.2	10.9	17.8	43.2	56.8
North Central	17.8	17.3	35.1	16.2	16.8	33.	7.	7.	14.	7.6	10.3	17.9	48.6	51.4
Other Accredited	16.5	20.1	36.6	11.5	14.2	25.7	7.1	11.8	18.9	7.4	11.4	18.8	42.8	57.2
Non-Accredited 4-Year	19.7	29.8	47.4	9.	13.5	24.2	5.6	9.6	16.1	5.1	7.9	12.3	39.6	60.4
TOTALS	19.1	21.3	38.1	11.3	15.2	27.7	7.5	11.2	19.	5.5	9.	15.3	44.1	55.9
North Central except Denver.....	18.9	19.9	38.3	11.6	15.6	27.	8.2	11.6	20.1	5.2	9.	14.7	44.	56.
Other Accredited	17.7	19.9	37.6	10.7	13.5	24.2	7.6	12.3	19.9	7.3	10.9	18.2	43.6	56.4
Non-Accredited 4-Year	18.4	23.4	41.2	12.1	16.	28.5	6.4	10.2	16.7	5.	8.8	13.6	41.9	58.1
Short-Course	31.4	39.4	69.7	8.6	15.8	26.1	1.2	3.5	4.3	...	...	...	43.4	56.6

B. ATTENDANCE.

Very little emphasis has been placed explicitly on enrollment and attendance in schemes of accrediting schools. While it has been insisted that there shall be a certain number of teachers, it has not been insisted that there be a specified number of students. But in measuring the efficiency of either a machine or an institution it is not reasonable to overlook either the quantity or the quality of the product. Though more thought has been given to the latter, it is less susceptible to measurement, so special attention will here be given to the former.

The extent to which the young people of a community are in its high school may be measured in terms of total enrollment, average enrollment, average number belonging, or average attendance. The latter is here taken as the more reliable. It is the time spent in school rather than the fact the boy was sometimes there that concerns us. Even with average attendance there is a small error, inasmuch as some schools count presence and absence only by full days, while others note the half-days.

In Table 19 the per cent of school population in average attendance in different classes of schools is given for all except short-course schools. Obviously a two-year or three-year school is not comparable to a four-year school in this respect. Average attendance, for the purpose of uniformity in this report, is the average of the daily attendance for the first, middle and closing months of the year. Average attendance, however, had to be reduced in the proportion that the number of tuition students bore to the total enrollment before it could fairly be considered in relation to school population.

Except for the union schools there is no large difference between classes according to their recognition as North-Central-Association, accredited, or non-accredited, but there is a large difference between schools of different legal organization. Distance is one prime factor in producing this difference.

TABLE 19.

PER CENT OF SCHOOL POPULATION IN AVERAGE ATTENDANCE.

Ordinary and Consolidated Districts:	Under							14 and over
	2	2-4	4-6	6-8	8-10	10-12	12-14	
North Central.....	..	..	1	6	3	8	4	1
Other Accredited .....	..	1	2	1	3	3	4	..
Non-Accredited 4-Year. ....	..	3	..	7	2	9	..	3
Total .....	..	4	3	14	8	20	8	4
Union Districts:								
North Central .....	..	1	..	..	..	2	..	..
Other Accredited .....	..	..	..	2	2	..	..	..
Non-Accredited 4-Year	1	2	2	2	3	2	1	..
Total	1	2	2	4	5	4	1	..

TABLE 19.—Concluded.

County Districts:	Under							14 and
	2	2-4	4-6	6-8	8-10	10-12	12-14	over
North Central .....	..	..	1	1	..	..	..	..
Other Accredited	1	3	3	3	2	..	..	..
Non-Accredited 4-Year ..	..	2	..	1	1	..	..	..
Total	1	5	4	5	3	..	..	..

TABLE 20.

CENTRAL TENDENCIES OF PER CENT OF SCHOOL POPULATION IN AVERAGE ATTENDANCE.

Schools.	Ordinary and Consolidated Districts.		Union Districts.		County Districts.	
	Median.	Mode.	Median.	Mode.	Median.	Mode.
North Central	10.37	10-12	10.5	10-12	6.	?
Other Accredited	10.	12-14	8.	?	5.3	?
Non-Accredited 4-Year....	10.	10-12	7.5	8-10	5.25	2-4

But if distance makes a union school drop below a district school, and causes county schools to fall lower still, it can militate against district schools, too. A large consolidated district or one in which there is no large center of population can not compare favorably with small districts or a clustered population so long as school population is the basis. True, the simple fact that the young people are *not* there is a weakness in the school, but if one wishes to push on further and ascertain whether the weakness arises from internal or external causes, he will find it of interest to compare high-school attendance with grade attendance. Grade children are mostly under the compulsory education law, though no one vouches for its absolute enforcement anywhere, and it is fair to assume that distance will show its effect on their attendance. But if distance interferes seriously with attendance, it will not militate so much against the older pupils. For this reason a district that shows poorly in Table 19 may show well in Table 21.

TABLE 21.

RATIO OF AVERAGE ATTENDANCE IN HIGH SCHOOL TO AVERAGE ATTENDANCE IN GRADES.

Ordinary and Consolidated Districts:	Under						.3 and
	.1	.1-15	.15-2	.2-25	.25-3	over	Median Mode
North Central .....	..	1	9	5	2	1	.195 .15-2
Other Accredited	3	1	4	4	1	1	.188 ?
Non-Accredited 4-Year....	3	5	7	4	2	2	.175 .15-2

With distance thus eliminated, the schools of the higher classification still do slightly the better at getting their children to the high school. In passing upon the efficiency of any school, however, it must be borne in mind that lax enforcement of the compulsory law would run up the ratio in Table 21. This would have to be checked by an examination of the distribution of

schools to outlying parts of the district, provision for transportation, and per cent of school population in average attendance in the grades.

Stability and regularity of attendance are other factors that cooperate with quantity of attendance to make for efficiency. So long as the work of a high school is organized on an annual or semi-annual basis, a school which has a certain 10% of its school population in average attendance every day is far more efficient than one which has one 10% in attendance one day and another 10% another day. A school which has 10% every day is more efficient than one which has 15% and 5% on alternate days, or reaches a very high mark in the winter only to disintegrate in the spring. The desirable qualities in this respect may be estimated in two ways. The ratio of the average attendance for the year to the average of the enrollment for first, middle and closing month of the year has been used to check the *regularity* of attendance of students while enrolled. If desirable this ratio could be taken month by month to locate points of strength and weakness. The *stability* of the school is indicated by the variation in attendance from month to month, taking that of the first month, for purposes of convenience, as 100. By such means superintendents and principals might take careful account to ascertain the effect of athletics, of social affairs, and opportunities for outside employment.

TABLE 22.

RATIO OF AVERAGE ATTENDANCE TO AVERAGE ENROLLMENT.

Schools	Under .85	.85-.90	.90-.95	.95&over	Median	Mode
Ordinary and Consolidated						
Districts	5	9	25	21	.932	.90-.95
Union Districts	5	4	8	3	.906	.90-.95
County Districts	1	..	6	5	.942	.90-.95
North Central .....	..	..	5	13	.958	.90-.95
Other Accredited .....	..	4	16	7	.93	.90-.95
Non-Accredited 4-Year	9	9	13	7	.904	.90-.95
Short-Course	2	..	5	2	.925	.90-.95

The fact mentioned above, that average attendance is computed differently in different portions of the State, accounts for an abnormally high ratio in a few schools. Uniformity in keeping records would be a valuable step in advance, because it would permit more accurate comparisons among schools. Table 22 gives data on fewer schools than most other tables, because it was impossible to secure the enrollment for the different months, due to a frequent custom of carrying only the total enrollment to date for the year. The usual minor classifications of schools were therefore omitted.

The students of county high schools seem to be more regular in attendance than those of district schools. Many have come from a distance and at sacrifice, hence with a purpose. One might expect the same to be true of union schools, but there the students do not often board away from home.

They attempt to come and go daily, a practice which shows in the results. The student who is away from home for the week is also less likely to be detained from school for work. Schools show a regularity of attendance corresponding to their standing. This is, in part at least, attributable, not to intrinsic excellence or morale, but to the location of recognized schools in centers of population, rendering school accommodations more accessible.

TABLE 23.

ATTENDANCE FOR FIFTH MONTH ON SCALE OF 100 FOR FIRST MONTH.

Schools.	Under					Over		
	70	70-80	80-90	90-100	100-110	110	Median	Mode
Ordinary and Consolidated Districts	2	2	11	31	19	8	92.3	90-100
Union Districts	2	..	5	4	4	5	97.5	?
County Districts .....	..	2	..	11	2	1	95.4	90-100
North Central .....	..	..	3	17	5	1	95.9	90-100
Other Accredited .....	..	..	5	12	9	3	97.9	90-100
Non-Accredited 4-Year..	2	3	6	15	9	8	97.	90-100
Short-Course	2	1	2	2	2	2	92.5	?

TABLE 24.

ATTENDANCE FOR CLOSING MONTH ON SCALE OF 100 FOR FIRST MONTH.

Schools.	Under					Over		
	70	70-80	80-90	90-100	100-110	110	Median	Mode
Ordinary and Consolidated Districts	5	10	20	21	9	4	89.7	90-100
Union Districts	4	2	6	2	2	3	85.9	90-100
County Districts	1	3	6	3	2	1	86.7	90-100
North Central .....	..	..	9	12	6	..	93.7	90-100
Other Accredited .....	..	3	11	8	4	3	90.6	80-90
Non-Accredited 4-Year..	6	9	10	6	3	4	84.	80-90
Short-Course	4	3	2	..	..	1	73.3	Under 70

All classes of schools hold together well until past the middle of the year. The differences that exist between the various medians at the fifth month are not serious. But toward the close of the term larger differences appear. The accredited schools then manifest much the greater stability. At the fifth month North-Central-Association schools were below the smaller accredited ones, due to the filling up of several of the latter at the approach of winter, but the larger schools lead at the close. The North-Central-Association is the most nearly homogeneous in type.

Some very excellent records were made by individual schools. Among the best were the following pairs of figures for fifth and closing months: 104 and 100, 103 and 100, 99 and 100, 102 and 100, 98 and 99. Among the worst were such pairs as 225 and 150, 129 and 145, 45 and 78. Of course the

climate or some other element not under human control may give a school its distinctive annual variations, but these nevertheless decrease efficiency and should be combated with all energy.

Whether a fair proportion of our school population is in high schools is a question of importance and difficulty. The most reasonable gauge is the record of other states, but allowance must always be made for topography, climate, density of population and the age limits of the school census. Among Western States, after making correction for different definitions of school population, Colorado is exceeded by Utah, Nevada, Washington, California, and probably Oregon, in per cent of school population in high school. Colorado is almost exactly on a par with Kansas and Nebraska in this respect. On the whole, our showing is fairly creditable, but not extraordinary—far from it in some sections of the State.* While education is so largely a local concern, judgments of states as wholes are less important, however, than of equalization of opportunities within states.

C. SIZE OF SCHOOLS.

North-Central-Association schools are, in general, much the largest. The smallest enrolls 72, and but four drop below 100. Other accredited schools run from 328 down to 26. Nearly two-thirds lie between 50 and 100. Non-accredited four-year schools show a group of six between 60 and 65 students, with the others distributed all the way down to three rural schools enrolling less than ten. Three-year schools enroll from 7 to 30. Two-year schools range from 4 to 33, but over half have less than 10. Reports from fifty one-year schools show one with 16 students, but no others over 10. Fourteen had but 1 student and fifteen but 2.

Following the other classification of schools, ordinary districts present the full range; union schools all fall below 200, with almost half between 25 and 100; county schools show a maximum of 328, and a minimum of 22, with considerably over half between 50 and 100.

D. CLASS DISTRIBUTION.

Per cents are of chief concern in the examination of class distribution, gross numbers of students having a significance only to caution against conclusions based on too small bodies of data. Totals for ordinary districts can not be given too much weight, since the proportion in the lower years is swelled by the several short-course schools, and the proportion in the upper grades is correspondingly diminished. Individual schools, except those in Denver, have not been analyzed in per cents. Some schools have numerous short-course neighbors from which students come for the latter years of their course, thus disturbing materially the normal class distribution. Students also leave non-accredited schools for a neighboring accredited institution, or else seek some distant accredited school of high stand-

* Raw material for extensive comparative studies between states can be found in the tables of age distribution and urban population of the U. S. Census and the reports of the U. S. Commissioner of Education.

ing. This movement almost destroys senior classes in some small schools, while it enables larger and better known schools to get some undeserved credit for holding their students in the high school. Hence in applying the test of normal class distribution to any school to measure its efficiency, tuition students must be eliminated.

If allowance is made for the skewing of the distribution curve by enrollment in short-course schools, the ordinary districts show a freshman class almost exactly proportionate to that of the county schools, while the union schools have four or five per cent more in ninth grade. Union districts suffer a very serious loss, over 40% from ninth to tenth grade, ordinary and county districts only about 30%. The loss of ordinary districts from tenth to eleventh declines somewhat, that of union districts declines greatly, but the county school seems here to experience its critical period. Each kind of school exhibits its greatest stability over the gap from eleventh to twelfth year, though defections in the ordinary districts are still serious. Of 750 seniors in the Denver schools in 1913-14, only 601 graduated. Records for other schools on this last point are not available. Union schools carry from the first to the last year only about one student of three, ordinary districts increase this to two of five, and county schools bring it up nearly to one of two.

By smaller divisions, one of the most striking facts is the extent to which Denver schools and the small group of North-Central-Association county schools carry their freshmen into the work of the second year. The heaviest losses at this point are in all types of union schools, the "other accredited" district schools, and the few non-accredited county schools. The last show a mortality of nearly 50%, probably an abnormal figure, since three of the four schools in this class are developing rapidly at present, drawing in more students and tending to show the larger gap next year between sophomore and junior years.

To trace all variations in each subdivision from year to year is of questionable value, but one point deserves special mention. Using either the totals, or the summaries of ordinary, union, and county districts separately, the per cents in the senior year invariably show the following rank from highest to lowest: "Other accredited", North-Central Association except Denver, non-accredited four-year schools. Under each classification "other accredited" has a higher per cent of seniors than Denver. The holding capacity of the smaller accredited school is manifested almost as plainly in its smaller per cent of freshmen than is found in other schools except Denver.

Three-year schools appear very unstable, possibly because each one is a four-year school in embryo. A student in one of them does not feel that he is completing a high-school course, and if he is ambitious to go elsewhere, he is apt to leave before his third year. Two-year schools make a much better showing in retention of students, better than some classes of four-year schools. Many of them have been operating as such for several years.

E. SEX DISTRIBUTION.

Unless special factors affect one sex more than the other, the enrollment of boys in Colorado high schools in conformity to school population should be about two per cent above that for girls. This is shown by Table 18 to be the reverse of the fact. In the entire table there is only one place where boys exceed girls, viz., in the ninth year of the small group of two schools listed as North-Central-Association county schools. For the summaries to the right of the table the disparity shows for classes of schools running over 500 students, no greater variation than three per cent either way from the general average of 44.1%. Denver schools, with their emphasis on athletics and vocational studies, have for that reason or some other attracted more than the normal number of boys, but unfortunately, in the absence of sex distribution by classes, it is impossible to tell whether this is simply *drawing* power or *holding* power. Non-accredited four-year schools draw boys most poorly, and North-Central-Association schools have no advantage in this respect over "other accredited" schools.

The proportion of the sexes from the ninth to the twelfth year undergoes a definite shift. On the whole, it is very near 8:10 in favor of the girls, but in the ninth year it is 9:10, and in the twelfth it is but a trifle over 6:10. Less than 29% of the boys remain until their senior year, as against over 42% of the girls.

The location of this shift is not specific. Both boys and girls suffer a smaller absolute loss as the years pass. The sophomore, junior, and senior classes have respectively, 59, 66, and 73% as many boys as the classes immediately below them. For girls, the corresponding figures are 71, 74, and 80%. The loss of boys exceeds that of girls only a little more in the first part of the course than in the last.

For different classes of schools some important differences appear, which are given for whatever significance may attach to them. Boys are held much better in small accredited schools than in North-Central-Association or non-accredited schools. The North-Central-Association school has no more power, or at least success, in retaining boys than the non-accredited school, possibly because the attractions and possibilities presented to the boy from the outside are stronger and more diverse in the North-Central-Association district. County schools retain boys better than other types. The most difficult gap for the boys seems to be the jump from the tenth to the eleventh year in non-accredited four-year schools, the easiest is the transition from the eleventh to the twelfth grade in the smaller accredited schools. Girls show much less variability, just as on the whole they are less erratic in the adolescent period.

It is at least plausible that conditions are enough different between communities to warrant careful study of the "boy problem" in each particular school, that critical points may be determined and met. Such studies must extend over more than a single year, the longer the better. Otherwise occasional and baffling facts of the most unusual character will be

mistaken for significant phenomena. For example, two schools enrolling between 80 and 100 had in their sophomore years fifteen boys and two girls, and nineteen boys and eight girls, respectively. This most startling fact is proved to be merely occasional by the presence of six boys and ten girls, and six boys and seventeen girls, respectively, in their junior classes.

F. PHYSICAL WELFARE.

The promotion of physical welfare of the student body by exercise or training has not been a generally assumed responsibility. The growing liberality of schools in appropriating some money for athletic supplies was referred to in a preceding section, but this affected only that voluntary sort of physical exercise which prevails among the young everywhere. The provision for exercise under instruction as a regular part of the school program is not general, but those who will are left to play, the outcome being violent and sometimes excessive participation by a few.

Three of fifty non-accredited schools and twenty-five of sixty accredited ones reported some definite provision for exercise under the auspices of the school. In a couple of schools instruction is offered for girls only. It is made elective in over four-fifths of the cases, and when prescribed is for girls only in nearly a half of the cases. The classes are usually divided between indoor and outdoor exercises, but a few schools use only the outdoor because they have no indoor space, while a few remain indoors because the character of the work suggests that as the best course.

The most common arrangement of the program calls for exercise once or twice a week. One school assigns physical training five periods per week, and one finds time for ten. This time is spent in various ways, but competitive games of different kinds are resorted to most frequently. In the order of their popularity these games are baseball, basketball, track, football, tennis, indoor baseball, and volley ball. Gymnasium work, presumably with apparatus, is mentioned five times, dumb-bells and calisthenics three times each, and dancing once.

The conduct of athletics was studied to determine the consensus of opinion relative to interscholastic contests. Dissatisfaction with interscholastic games has arisen ostensibly for several reasons: (1) the expense of trips, (2) the poor sportsmanship of athletes and student body, (3) the discreditable conduct of teams on trips, (4) the magnification of the importance of games in the eyes of students, to the partial or total eclipse of their school work, (5) the relatively few students who secure any benefit. Nevertheless interscholastic games are still prevalent. Their relative prevalence is made clear by the following figures in answer to the question: Is emphasis placed upon inter-school or intra-school athletics?

	Inter-school	Intra-school	Both	Neither
Accredited schools	25	25	11	1
Non-accredited schools	15	4	3	7

The results suggest that the size of the school is the determining factor. The majority of the high schools of the state are so small that they must choose between interscholastic games and none.

Physical examination is made of most of the high-school students, as provided by law, but eight non-accredited and thirteen accredited schools report no such examinations. Dissatisfaction is expressed in many quarters with most of the tests outlined on the official blanks. Tests aside from those of sight are unsatisfactory, but a number of men feel that gross defects, especially of vision, have been uncovered by the examinations, and that valuable treatment has been secured as a direct consequence of the notification of the parent. Medical inspection is beginning in a half-dozen schools. As yet it is occasional or semi-occasional. Doubtful cases are sent at once to a physician. Students absent on account of illness are compelled to present a certificate from a doctor on returning to school. Sometimes an entire room or school is examined for traces of a contagious disease that has already broken out in the community.

The hygiene of the school plant as a means both of economizing the child's energy and preventing the inroads of disease is stressed more and more each year. Four international congresses on school hygiene have now been held. It was therefore judged advisable to carry along with the survey a number of pertinent inquiries bearing on the school plant. The discussion below is based upon a tallying of the sheets of sixty schools chosen at random in equal numbers from North-Central-Association, smaller accredited, and non-accredited four-year schools.

The school site usually has some trees, but less than half of any kind of schools have numerous large trees upon or about the site. Many have some small trees which in due time will protect more or less from sun and wind.

The site is too small for any games of a group character in five North-Central-Association, three other accredited, and one non-accredited school. All kinds of games can be played, however, on the grounds of over a third of the schools of each class. The remainder of the sites are small, allowing only for tennis, basketball, or indoor baseball. Lack of space is a handicap only in the larger schools, where the students must often go a considerable distance to gain open ground and then submit to the most wretched conditions for training—no suitable shelter for dressing and no opportunity for bathing. In smaller towns it is never far to a good place for games, and the facilities offered by the school building for dressing, etc., can still be utilized. A few schools have large athletic fields, well laid out. One county school has track, surrounding football and baseball fields, and a grandstand seating several hundred people.

Two specific questions were asked with regard to the proximity of nuisances. Two very large city schools are well within a hundred feet of street car tracks, on thoroughfares along which much other traffic passes. Another North-Central-Association school is about a hundred fifty feet from a paved

street traveled by cars and many vehicles. From noise-, smoke-, and odor-producing industries there is scarcely any trouble, though a branch of one very large school had to pass a part of its year in a building, the first story of which was used as a garage. Five schools were found within one to two hundred feet of stables, most of which were well kept. The school stable in one instance was near the building, and in another an enormous manure pile was across the street not over a hundred feet from the building.

The topography of the state makes the problem of a water supply more simple than in many other parts of the country. A public supply is available at nearly every accredited school and at a majority of the non-accredited ones. Some schools^a haul their water from adjacent towns at no small expense. Six of twenty non-accredited schools use wells, driven or open. In five instances wells are not over a hundred feet from outdoor toilets. Sanitary fountains are found in nearly all accredited schools, and in most of the others. Individual cups were used to dip or catch the water in all remaining schools except three. At those three the common cup was found, but in only one case with the certain knowledge of the principal. Only in certain non-accredited schools were receptacles used. Usually they were tanks or stone jars, cleaned at intervals ranging from daily to very infrequently. In two schools the open pail was found, in one of them filled from a creek on which privies abutted farther up. In the sixty schools only three cases were learned of in which the water supply had ever been contaminated. So general is the feeling of security that the water is regularly tested hardly anywhere. The principal need now is stricter precaution against the communication of disease from pupil to pupil in the school by way of the cup or pail. Some of the fountains run very feebly, and children were seen to take a portion of the bulb into their mouths when drinking.

Toilet accommodations are sharply differentiated between accredited and non-accredited schools. Over four-fifths of the former have comfortable indoor toilets connected with sewer system (or cesspool); over four-fifths of the latter have the ordinary outdoor closets. The outdoor vaults are rarely cleaned oftener than once a year, and in several places the removal of the closet to a new location, when the vault is full, is the customary practice. The majority of the vaults offer easy entrance to house-flies. Toilets are disinfected generally in the larger schools, not in the smaller ones. The ordinary disinfectant is chloride of lime, sometimes combined with creosote, carbolic acid, or dilute sulphuric acid. Fresh lime and formaldehyde are also used separately. The application of the disinfectant is very irregular with some schools, but about half the accredited schools disinfect weekly or oftener. Several have types of the "constant-drip" disinfecting apparatus. The frequency with which toilets are scrubbed correlates closely, by chance or otherwise, with their standing. Most North-Central-Association schools attend to this matter weekly or oftener, most non-accredited schools at longer intervals than a week or never. Small accredited schools fall definitely between the other two classes. The outdoor toilet is the one that suffers principally from

obscene marking or cutting. Approaches in several places are not properly screened. A common towel hangs in a third of the high schools, and usually is not changed daily. North-Central-Association schools lead in the installation of this convenience of shady hygienic standing.

Protection against fire or panic was studied only in buildings with over fifty students above the first story. Hence it touched few non-accredited schools. Scarcely any of our high schools can be termed "fire-traps". A majority of the buildings have two exits from all rooms above the first story, hold fire drills as often as once a month, and can be emptied in a minute or less. Almost no doors fail to open toward exits. The average width of stairs is five feet per hundred students using the same. Twenty-three buildings have no external escapes, as against thirteen with iron or steel stairs, or some other device. One school uses a metallic chute, another has iron ladders, a third has wooden stairs. The wooden stairs were fairly satisfactory because the building was brick. Less satisfactory is the prevalence of buildings with a single stairway. To be sure, these do not run over two stories and several of them have external escapes. Four stairways were located directly over the furnace room, though in each case there was some other means of exit.

Cloakrooms are used by the sexes indiscriminately rather than the reverse. This is occasioned by the fact that most of the hanging room is in the central corridors or separated from them by low partitions. A third of the schools have less than seven inches linear wall space per pupil and some run down to three inches. So short an allowance means that wraps from all kinds of homes are hung over one another in the most promiscuous fashion. One school has individual lockers, and four have the individual hanging spaces from eight to eleven inches wide separated by wooden partitions which may completely prevent contact between the wraps of different students. Cloakrooms separate from the main corridors are sometimes not ventilated at all, and emit the familiar stuffy, sickening smell.

With reference to the lighting of about 600 rooms, several facts appear. Buildings of the larger schools show the influence of modern ideas in school architecture in the direction from which the light comes with respect to the pupil, the light ratio, and the reasonableness of width of room. The figures below apply to rooms that fall below the standards set to their left:

Per cent of Rooms.	North Central.	Other Accredited.	Non-Accred-ited 4-Year.
Admitting any light from the right.....	7.0	23.8	36.0
With a light ratio under 1:5.....	21.0	64.9	62.0
With width over twice height of window tops	17.5	37.0	48.0

Over two-thirds of the rooms are furnished with the opaque, dark-green shades found in homes. Rooms lighted from the south must submit to direct sunlight in some parts, or be poorly lighted in others, because the shades have been drawn. Venetian blinds used in a few schools meet the prob-

lem of light, but they present mechanical difficulties and are objected to as collectors of dust. Translucent shades are coming into some of the newer buildings. No definite results have come from a study of the points of the compass from which light is admitted to school rooms, save that in general east and west are preferred by architects to north and south. Walls are tinted in all imaginable combinations, and papered and painted. The light sand-finish with no coloration is still most popular. Bluish and greenish tints, light rather than dark, light cream and buff, are next in vogue.

Direct steam heat is used in thirty-six out of sixty buildings, furnace and hot water coming next. Indirect steam and stoves also are found. Four buildings containing non-accredited schools were heated by *unjacketed* stoves. A fourth of the buildings can not be kept up to 68 degrees F. in coldest weather. This trouble correlates inversely with the standing of the schools; North-Central-Association schools have least of it and non-accredited most.

Windows are the main reliance in ventilation. Many "gravity systems" work intermittently or not at all. The direct-indirect system, now forbidden by law in some States, is used in 10 per cent. of the buildings. A half-dozen buildings have a plenum fan, and two an exhaust. That good intentions miscarry is attested by the presence of one plenum arrangement which has never been used because there is no day current furnished by the local power plant. The most archaic feature of the supposedly better buildings, those used for high schools, is the location of inlets and outlets. These are not usually on the same side of the room, but are at or near the floor on opposite sides. In three accredited schools the windows are the inlets. In four or five the proper arrangement is reversed, the inlets being near the floor and the outlets high up. About a fourth of the schools have disposed of the matter as contemporary sanitary science requires.

Four schools introduce the air over water pans and thus secure humidity. Furnaces are the easiest heating apparatus with which to do this. At one modern plant the air is washed by spray. With steam heat, reliance is placed upon the small amount of moisture that can escape from the radiator.

Daily sweeping and dusting appear to be the invariable practice. A vacuum cleaner is used in one school, but elsewhere it is brush or broom or both. The brush is favored for several reasons. Dusting is done by feather duster and cloths, oiled, dry, or damp. They are given in the order of their occurrence. If it be granted that the feather duster is the worst and the oiled cloth the best, the standing of schools once again correlates precisely with their dusting methods.

Sweeping compounds, consisting of patented material or oiled sawdust, are used in a majority of the schools, even in many where the floor is oiled. The floor oils differ so in thickness and composition, and are applied so differently that conclusions can hardly be drawn as to the common practice. Scrubbing is usually done just before oiling floors, where floors are oiled.

Those who care little for their floors in one respect are generally lax in all. Three of the forty accredited schools admitted that their floors are *never* scrubbed, and one superintendent plead oiled floors as the excuse.

A very few small schools make no effort whatever to keep down dust. Probably the dirtiest room in the state is one occupied by about fifty high-school students. No sweeping compound is ever used, the floors are not oiled, dusting is done with a dry cloth, the school site is plain adobe, there is no scraper, mat, or sidewalk on the premises. While this is an extreme instance, there is a deplorable lack of mats, scrapers, and walks in the smaller schools, which lack that kills whatever ambition a janitor may carry into his work.

Fumigation by approved methods is expensive; the imminence of an epidemic is almost necessary to bring it about. Naive notions of disinfection exist in some quarters. High schools have hung upon their walls small containers, which are reputed to possess high power, but have not even a perceptible odor. Formaldehyde in some form or combination is the resort where fumigation is really taken seriously.

The single desk is about universal for study purposes, but chairs and benches that do not crowd are not unusual in recitation rooms. This scatters students somewhat over the room and lessens danger of contagion through the breath. A third of the high schools furnish free texts. Several districts do so for the grades, but not for the high school. Evidently financial considerations are weightier than hygienic ones in settling this policy. Free texts are not fumigated any more regularly or satisfactorily than buildings.

Adjustment of furniture to pupil is not proceeding very rapidly. One size of desk in each room is the situation in half the schools. One school has three sizes in each room. Chairs and benches in recitation rooms are hardly ever without arms. Armless opera chairs in the auditorium are occupied for study by parts of one overcrowded school of 300 students. Five schools have some adjustable furniture, three others have nothing else. Whenever such seatings were found, the principal was asked how often adjustments were made. The answers ran: "When needed", "As students desire", "Not this year" (the year was then half over). In one school from 20% to 60% of the furniture for each of six different rooms was adjustable, but when measured it was all found to be of the same size. Two principals were working out the possibilities, however, for they answered the question with "Whenever the student's seat is changed".

G. SOCIAL ORGANIZATION.

Contemporaneous and recent writing and discussion in the field of education have dwelt much on the social aim, and have attempted to show how the school might be made a training school for social responsibility. The machinery by which the classes are conducted and all the activities of the student at school have read into them the keynote "Socialization". Experiments in pupil self-government, various radical and unfortunate ventures followed. School people were groping then and are still groping for effective

means to reach the desired end. Those who have been dealing with high-school students have discovered the social consciousness developing rapidly and exhibiting itself in those rudimentary forms which we call class spirit, team spirit, school spirit, cliques and fraternities. The rising social consciousness demands outlets and becomes perverted if not directed into normal channels. It is designed in this section to give some idea of the devices that have been seized upon in this State to meet this clean-cut high-school problem. The treatment must be qualitative rather than quantitative.

First, there is no notable participation of students in the government or discipline of the high school. Officers of the student-body in one small union school have taken the responsibility for conduct about the building during the absence of teachers at the noon hour. Principals have sought to give social training to their students through the various adjuncts of school life.

Among these the most important is athletics; most schools, as previously shown, have some kind of athletic team. Students are generally given a very large amount of discretion in the management of athletic enterprises. They are not usually permitted to fix the qualifications for participation in interscholastic contests, unless they should desire to raise the qualifications which principals have fixed through the State Interscholastic Association or other agreement. They are limited in the arrangement of schedules to supervision that will protect the main interests of the school. Otherwise they are given a relatively free hand. The financial or business question is up to them for solution, and their success in meeting it decides the extent of the season's contests. Strength is gained in most schools by the organization of one association for all the students who care to join. The many factions with their divergent and conflicting interests give a fine chance for exhibition of fair play and compromise. In four or five schools the boys and girls have separate associations, and in four schools only the boys are organized. One school permits each team to manage its own season. Two Denver schools, with dues of a dollar per year, have 50% and 85%, respectively, of their enrollment as members of the athletic association. Many smaller schools draw a very large proportion of their students into this organization. One North-Central-Association school manages athletics through a committee consisting of one representative from each class, a general student manager, and the principal; another does the same through a board of two teachers and four students. A third minimizes the business side by doing away with most interscholastic affairs and dividing the school into five "clubs" of boys. These clubs are captained by five boys, who are first selected, and then "choose up". From each club a team is made up to contest the other clubs in soccer, basketball, and tennis. Track and field meets were also held under these auspices. The results were generally close. The girls were similarly organized for tennis and basketball.

Akin to athletic contests between classes within the school is the more or less annual contest between certain classes. In college towns this takes

the form of a freshman-sophomore rivalry, but elsewhere it is more frequent between upper classmen. The class spirit underlying these outbursts is permanent and may produce a renewal of disorder at any time. The rivalry becomes one of wits. Triumph of one party lasts only until the other can turn the tables. Nothing is ever settled. Instances annually occur of disrespect or destruction of school property and private property.

Very few schools have adopted a definite form of combat for the settlement of class superiority, but where the attempt has been made, the outcome has satisfied expectations. In one school a senior class of six girls could not compete with the junior class, which enrolled some boys. The girls were exceedingly anxious to make a showing of some kind, so the superintendent arranged a tug-of-war between six girls of each class. The event was largely attended, and brought out enthusiasm. It disposed of the sanguinary aspect of class spirit for the year. The State Preparatory School has taken advantage of its location to institute a "flag-day" contest which suits requirements, but the details are too complex to give here.

Another device for quelling outbreaks is the shunting of class spirit into a very different channel. Instead of humiliating, one class may seek to do honor to another class. The competition is still there, but it is not a competition with the entertained; it is a competition with the standard set by previous entertainers. The commonest custom is the annual reception of juniors to seniors. With probably a dozen schools this has become an institution. At one school the faculty and seniors are the guests; at three the reception to the seniors takes the form of a banquet. Much less common is the sophomore reception for freshmen in the fall, and the annual reception given by each class for the entire school. Some schools have parties given only by certain classes to the school, here by the freshmen, there by the juniors, and again by the sophomores. Or the classes form all sorts of combinations for receptions or other social affairs. These extraordinary cases are not usually traditions of the school, but represent the initiative of a particular group that year. The party for the whole school is generally a feature of the smaller school, though there are notable exceptions. Classes also enjoy celebrating their own exclusive affairs. The survey shows senior socials, senior "proms", junior "proms", sophomore parties, freshmen picnics. Thus the class has a function not only exclusive, but also distinctive in its nature.

To carry on these and other less purely social activities the classes have their temporary or permanent organizations. Where the class is large enough to accomplish anything by itself, a permanent organization is the rule. A few principals discourage class organizations except in the two upper classes.

The school play stands with the group game as a social coordinator of importance in the high school. The older forms of public appearance for the students have been supplanted in most places by the play, because the latter is thought to secure most of the results attained by the other means, is always regarded as a success by the average patron, and is a money-maker

of the first order. The classes in combination or separately give plays according to the size of the class and the number in the cast. The small school gives a school play, the larger school gives class plays. The seniors lead all other classes, recruiting their cast in part if necessary from the other classes. The reason for the seniors taking the lead is that they need money for commencement expenses not of a purely personal character. The seniors need money for the senior memorial, now a tradition in many places, and for a commencement speaker, if the board does not assume responsibility. The board may put only a limited amount into commencement and this the class seeks to enlarge. Admission to commencement exercises is free in numerous towns, and this puts an additional burden on the class.*

When the plays are given by the whole school or by others than the seniors, there is no limit to the variety of purposes for which the proceeds go. Athletics benefits most, but by no means exclusively. School interests are promoted to the extent of several thousand dollars per year by the efforts of the boys and girls. Each class strives to make an annual payment on the piano debt in one town. In another town interest centers in art decorations, the library, lantern slides, the school orchestra, magazines for general reading. German students gave a play to buy pictures for the German room. A high-school play netted \$20 and a senior play \$55, all of which the students pledged on a stereopticon, should the board furnish the balance. A school enrolling only sixty realized \$90 from two entertainments and a circus, and \$115 from the senior play. It is not uncommon to find funds raised averaging several dollars for each pupil.

If one plan does not work well, it is repeated or replaced by another. The tenacity of the students sometimes is admirable. A small county school gave a play in three different towns in order to clear \$40. Two plays, a box supper, and an ice-cream social brought \$84 in a little school. An ambitious and determined young college woman went into a country village to teach a union school of a dozen students. There was not a book in the library, but at the close of the year there were seventy volumes. A great deal of this was made possible by three dances at the school building. Refreshments were served in connection. Forty-five dollars for a box supper, \$38 for a pie social, \$50 for a supper served by the Domestic Science classes show the possibilities of cooperation in small schools. Girls sold candy down town for the benefit of athletics. Three schools managed the town lyceum course for profits. The boys of a county school gave a minstrel show. Perhaps the largest schemes are the fair and the circus. These are undertaken only by a very few large schools. One clears \$400 or \$500 each year.

An interesting and suggestive variation in a little town was the agreement with the proprietor of the moving-picture show that the school should

* The commencement exercises are not the only ones which are made free. There is in some communities a disposition to make free everything connected with the school. The plays are free in a couple of towns, in one case not to the public, but to the school and to the parents of those participating.

receive all above operating expenses for a certain night each week. The "school" night was the one that had carried no profit to the keeper of the place, but with the school behind it, it became one of the best nights of the week. It would seem that under such conditions the character of the films might also be determined in part by the school, and the educative potentialities of the kinetoscope be exploited a bit.

The senior memorial as a pledge of loyalty to one's school is growing. Few schools of consequence are without it. Paintings, friezes, statuary, a grafanola, a flag pole, a fountain, are gifts that have been left. Some classes are so little anxious to claim attention that they have made contributions to the library.

The school publication deserves notice, not because it is expected to prove a source of profit, but because it does demand sound business management to prevent a deficit and calls for a corresponding amount of wisdom in organization and selection of officers. About a dozen high-school papers are issued monthly in the state. One appears semi-monthly. A dozen schools issue some kind of annual, under the control of the whole school in half the cases, under the management of seniors and juniors in the other half. Schools which find it impossible or unwise to finance this undertaking insert notes in local papers. These are *in toto* neither creditable nor the opposite, but they are a type of school activity which has been found advantageous. The plan of notes by each class has been tried, but usually some correspondent or correspondents represent the school as a whole.

Besides the organizations mentioned there are many representative of special interests, and not directly commercial. Among these are glee clubs, orchestras, camera clubs, literary societies, debating clubs, Shakespeare clubs, German clubs, a travel club, a band, a Spanish club, and an agricultural club. These are officered and run by students, though teachers are usually members, and often active, *sub rosa*. Most of the general literary societies held at school and in school hours are involuntary, or if not strictly so, do not represent student spirit and activity. Debating clubs are usually for the sexes separately, but arouse much more interest among the boys.

Students are taking some interest in sociological and religious problems. There is a Y. M. C. A.; a Y. W. C. A.; a girls' club, whose members read, sew, and study social problems; a "Round Table", composed of girls who study religious and social questions and send representatives to the Estes Park Summer Conference of religious workers. Students of a large city school collected a Christmas offering for the poor.

Several schools oppose the policy of breaking up into so many units operating independently. Hence they have organized a Student Body, to which all belong and out of which all the differentiated activities, except those of a purely class character, grow.

The detail of this review is not intended to serve as a suggestion that any school can safely attempt all the activities mentioned. The particular directions to be taken in a school will depend much on predilection and ca-

capacity for leadership in the faculty. Special undertakings always interfere with regular work. The solution is to be found in a balancing of the loss and gain account. One school was seriously disturbed for several days by an important venture that enlisted many of the students, but the principal remarked that the question in his mind was "whether students who were developing the initiative and administrative ability shown, for example, by a girl who managed a parade of over forty automobiles filled with cheering students, could be a failure *anywhere*, even though grades in certain subjects suffered for the time."

H. THE GRADUATES.

The total number of graduates in 1913 was 1900. Returns from all except Denver and two other North-Central-Association schools gave data on the *immediate* decision of 1202 regarding higher education. An institution of higher learning was construed to be one which demands for admission the equivalent of graduation from high school. No facts could be gathered as to what percentage goes to college a year or more after completing high school.

TABLE 25.
SUMMARY OF CLASS OF 1913.

Schools.	Total.	In Higher Institutions in 1913-14.				Teaching.	
		In Colorado.	Else-where.	Total.	Per Cent of Total.	Number.	Per Cent of Total.
North Central	835	189	56	245	29.4	77	9.2
Other Accredited	231	95	17	112	48.5	43	18.2
Non-Accredited	136	38	6	44	32.4	15	11.
District	859	242	45	287	33.4	98	11.4
Union	116	27	17	44	26.4	9	7.8
County	227	53	17	70	30.8	28	12.3
Totals	1,202	322	79	401	33.3	135	11.2

One important showing of Table 25 is the superiority of the smaller accredited school in getting its students to continue their education. How far this is due to the closer personal touch of student and teacher is unknown, but a large part of the secret must lie there. The non-accredited school drops down because of the shift of ambitious students to accredited schools to finish their courses, and because the student from the non-accredited school does not feel that he is so well vouched for as his brother from an accredited school. Unless he has unusual courage and confidence he will not strike for college.

A second matter for attention is the larger percentage of young teachers turned out by the smaller accredited school. If any class of schools has a responsibility for some small efforts in the way of teacher training, this is the class, not because boys and girls ought to enter teaching without higher training in academic and normal branches, but because they *do* go to teaching without it.

Union schools are considerably below the others in percentage of graduates going to college and entering teaching. Conclusions relative to a class of schools, however, are not applicable to particular schools of that class. One union high school sent to college seventeen out of twenty-two graduates in 1913. Statistics school by school are not presented here, because in all except a very few of the largest schools the variation from year to year is large. A collection of such figures for five years from any school would be suggestive of the impulse it gives its graduates in certain directions and would register pretty definitely the pulse of the community in those directions.

It is improbable that any school can regard the percentage of students sent to college by other schools as an absolute criterion of what it should do. Low standards in this respect, however, can be checked by comparison with other schools similarly situated, and progress or retrogression can be established by comparison with former records of the same school.

IV. THE TEACHING STAFF.

The agent most potent in its action on the student body is the teacher. Course of study, texts, elegant buildings, faultless equipment, any of these would be gladly sacrificed if necessary to secure a teacher. The character of the teaching force is of prime concern then to the patron, the pupil, the superintendent, the principal, and even to the teacher, present or prospective. No one is prepared to contend that all that inheres in a teacher, even all the most important qualities, can be made a matter of exposition, but it is fitting to study into those elements that can be given tangible expression.

A. PREPARATION.

To begin with those characteristics which it is hoped a teacher will bring to his work, and upon which a premium is always theoretically, sometimes actually, placed, the first one is schooling. What fund of information has this teacher, which will bear on the problems of his profession? Because examinations are less in vogue than formerly, examination grades can not be produced in evidence. One must fall back on time served or degrees secured. That neither is wholly satisfactory all must agree. A degree secured on three years' work can not in general be regarded as equal to one secured on four, yet such differences often occur. Colorado receives teachers from all parts of the country and from all kinds of schools. Mere time served may likewise be unsafe. A poor student may take five years to complete an A. B. that his fellow carries away in four. Or he may do correspondence work, private reading, something which does not readily reduce to hours or credits. Many teachers finish their secondary schooling at college.

Years in higher institutions have in this report been reduced to allow reasonable time for the completion of high-school work. Three years in a college preparatory department have been taken as equal to four years in a high school. The figures in Table 26 stand for years of preparation above a four-year high school or its equivalent. Few records are considered unless carefully filled out to account for all time spent in educational work. This is a necessary precaution because of the large discrepancies in the records of people as they turn them in year after year.

TABLE 26.

PREPARATION OF TEACHERS ABOVE A FOUR-YEAR HIGH SCHOOL OR ITS EQUIVALENT.

Schools.	NUMBER OF TEACHERS.						20 Hrs. in each Subj'ct* now taught.
	Less than Four Yrs.	Five Years or Over.	Degree Held.			Professional Preparation of 10 hours or more.	
			None.	Minor.	Ad- vanced.		
Accredited (except Denver) .	140	78	77	31	49	276	233
Non-Accredited	46	59	26	16	7	73	26
District (except Denver)	129	69	61	37	56	246	186
Union	21	10	13	2	7	42	24
County	35	10	15	11	3	71	49

Schools.	PER CENT OF TEACHERS.						
Accredited (except Denver) . .	30	17	17	7	10	70	60
Non-Accredited	40	10	22	14	6	72	25
District (except Denver)	30	16	14	9	13	70	54
Union	34	16	21	3	11	70	40
County	38	11	16	12	3	82	56

The number of teachers is given in the upper half of the table to indicate the extent of the reports on which the table is based. The per cents are the significant figures. The larger part of the teachers form a type class, which is not noted in the table. They have had four years of college or university work, and hold a regular baccalaureate degree, such as A.B., B.S., or Ph.B. Averages of the whole body then would not so well show the differences between schools.

Table 26 shows only the amount of variation from this type, which is the published standard for accrediting. The non-accredited institutions fall but about 50% further from the mark than the accredited ones. District, union, and county schools show no great differences, though the county schools fall behind some distance.

The last columns bear on special rather than general preparation. Three reasons explain the advantage of 72 to 70 in favor of non-accredited schools in professional preparation: (1) many teachers who have no degree have attended normal institutions for a limited time and there received pedagogical training; (2) nearly all who have minor degrees have received them in normal institutions, because colleges and universities do not often grant such; (3) many excellent schools with a stable teaching force have teachers of long experience, who left colleges before pedagogical courses were emphasized or generally offered.

The last column calls attention to a primary defect in the placing of teachers. Colleges are nearly all organized on a system of "majors", whereby a student stresses his preparation for a special field. Armed

* "Subject" means "department", as construed on page 57.

with his diploma, he then goes out and is assigned to a department absolutely regardless of his college major. That only 60% of teachers in accredited schools should have had two years of college work in the departments in which they work is unnecessary and unfortunate. The figure drops to 25% in non-accredited schools more because the teachers must work in many different departments than for any other reason.

Taking the faculty of each school as a unit, the average preparation of teachers in years is presented in Table 27.

TABLE 27.
AVERAGE PREPARATION OF FACULTIES IN YEARS.

Schools.	Under 1	1-2	2-3	3-4	4-5	Median	Mode
North Central .....	..	..	1	15	15	3.97	?
Other Accredited .....	..	..	6	17	10	3.64	3-4
Non-Accredited 4-Year.	2	2	7	16	19	3.75	4-5
District	1	2	9	31	31	3.80	3-4
Union	1	..	3	7	8	3.65	4-5
County .....	..	..	2	10	5	3.75	3-4

The homogeneity of groups decreases as one goes from North-Central-Association schools down to the middle of the table. Below the middle of the table county schools are most nearly homogeneous, perhaps because most of them are accredited.

The small difference in amount of preparation between different classes of schools would probably not have been predicted. The averages for accredited schools are materially lowered by the teachers of vocational subjects. A number of these have had no preparation in higher institutions. This is most often true of commercial teachers who have frequently taken short terms in business colleges without attending high schools more than a couple of years. Teachers of manual and household arts also have made a practice of taking a short course in special schools. On the other hand, aside from imitation relative to course of study, non-accredited schools have caught no standard of accredited schools more definitely than the general requirement of college graduation for qualified teachers. This also has helped maintain their average.

The continuing preparation of the teacher is but another phase of the general preparation. Some of the agencies for continuing preparation are poorly organized and ineffective. Local general meetings may mean much or nothing. Reading circles are generally more definite, but need exact checking to determine results. Correspondence or extension-class courses are a more reliable index, but the summer session stands at the head of the list as most satisfactory.

With these limitations in mind, the following table is given for what it may be worth. It is based upon approximately sixty-five accredited and forty-five non-accredited schools:

TABLE 28.

PROVISIONS FOR PROFESSIONAL GROWTH OF TEACHERS.

Agency.	Schools.	
	Accredited.	Non-Accredited.
Local meetings	34	8
Reading circles	29	19
Correspondence or extension work....	30	8
Summer sessions	42	14

Since a large school was tallied under "Correspondence Course" or "Summer Session", if any one of its force was utilizing such means for professional advancement, it follows that large schools may have made a showing quite out of proportion to the actual number of teachers affected. But on one point the number of teachers was noted, viz., attendance upon summer sessions of higher institutions. Some 430 teachers in accredited schools and about 120 in non-accredited schools answered this question for the summer of 1913. Of the first group 64 and of the second, 29 were in some higher institution. The percentages for the two cases were 15% and 25%, respectively. Some of the largest schools, with highest salaries, and *salary schedules based on tenure*, had almost no teachers in summer sessions, but a small percentage did spend their summer in valuable travel. To draw general conclusions from data for a single year would be unsafe, but the hypothesis is suggested that provision for stability in teaching force must be carefully framed to discourage mental "dry-rot".

Another problem connected with preparation, and one on which light will be welcomed by those proposing to enter teaching, is the relation between preparation and reward. It has been shown that a fair percentage of teachers continue their preparation while in service in various ways, and that the teacher with a standard degree and approximately four years of residence work as a college student is the type that is dominant. The smaller number of others, according to Table 26, suggests difficulty or discrimination which they must meet in becoming high-school teachers. It is possible to get some idea of the financial discrimination against these people of inferior preparation. This is done by taking the sexes separately and by eliminating the effect of experience through a comparison only of those who have equal amounts of it. Since a large part of our teachers work for but a short term of years, and because the present status is more important than that of several years ago, no teachers are considered in Table 29 if they were teaching more than their third year at the time of the survey.

TABLE 29.
RELATION OF ACADEMIC PREPARATION TO SALARY.

Median Salaries of Teachers Holding—	Year of Teaching Experience.					
	First.		Second.		Third.	
	Men.	Women.	Men.	Women.	Men.	Women.
A Minor Degree or no Degree..	\$783	\$650	\$950	\$683	\$1,100	\$750
A Standard Degree.....	892	700	925	781	1,037	807
An Advanced Degree	950	750	1,350	825	....	....
Average Salaries of Teachers Holding—						
A Minor Degree or no Degree..	821	650	950	694	1,033	730
A Standard Degree.....	938	693	925	757	1,061	826
An Advanced Degree	950	750	1,350	830	....	....

Some of the groups are very small, those for advanced degrees ranging from one to five. The effect of schooling is plain in the case of the women. There is not an exception in the table to the general rule, "Better preparation, better pay". For the men the same conclusion is accentuated the first year, which is probably the reason for its reversal the second. Such a reversal would not have occurred if the normal gain by virtue of experience had been registered the second year. The man with subnormal academic preparation, who is able to force his way into the high school and hold his place for a year, appears to adjust himself pretty readily and to make up his original handicap. But there is one other fact to be taken into account, which may explain everything that needs explanation. A strict check shows that the majority of the men with no degrees or minor ones, and all the more highly paid ones teaching their first, second, or third year, were teachers of Manual Training, commercial branches, Agriculture, or Physical Education. The man without a standard degree who teaches other subjects is at a disadvantage that amounts almost to disqualification.

B. EXPERIENCE.

The second asset which patrons desire a teacher to bring to his work is experience. If this be of the right sort, the teacher is in demand. Table 30 shows that the schools which will hereafter be found to pay the most liberal salaries are drawing to themselves the teachers of ripe experience so far as women are concerned. The other sex does not show any great difference in distribution between kinds of schools outside of Denver, except that county schools are hiring a younger set of men. Women work into the more desirable schools or quit teaching in a relatively short time. Men are more easily contented. This is explained partly by the fact that men hold most of the principalships, and thus receive the best salaries in the smaller schools. The remainder of the explanation may be found in the discussion below of experience in relation to salary.

Table 30 takes each teacher as a unit and indicates the amount of experience for certain classes of schools. Table 31 takes the average experience of each school as the unit, thus making as many units as there are schools. In this way one can readily see to what extent schools of the same class

differ in experience of faculty. Such a difference as exists between Denver and other North-Central-Association schools obviously will not exist between Denver and each individual North-Central-Association school. Moreover, if a school's efficiency is to be judged by the experience of its faculty, it is necessary to have data on schools as units, in order to have some criteria on which to base an estimate.

TABLE 30.

TOTAL YEARS EXPERIENCE AS A TEACHER INCLUDING THIS YEAR.

MEN.																	
Schools.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Denver	1	3	1	1	2	3	2	3	..	5	4	1	2	..	4	..	
Other North Central....	16	9	9	9	9	4	8	4	9	6	4	9	10	6	5	1	2
Other Accredited.....	6	7	7	7	4	4	2	1	2	4	6	4	2	1	4	2	1
Non-Accredited	6	4	4	1	3	5	1	6	1	4	2	1	3	1	4	1	1
District (ex. Denver)...	19	14	12	12	10	9	9	8	11	10	8	7	13	6	12	4	2
Union	5	3	1	1	2	2	1	3	..	2	2	4	1	..	..	..	2
County	4	3	7	4	4	2	1	..	1	2	2	3	1	2	1	..	..

												25 or			
Schools.	18	19	20	21	22	23	24	over	Median	Mode	Aver.				
Denver	5	5	2	2	1	1	1	12	16.1	?	16.5				
Other North Central....	5	4	6	1	..	1	2	6	9.	1	9.9				
Other Accredited .....	..	1	2	..	1	1	1	2	7.	?	9.				
Non-Accredited	3	1	1	2	..	2	..	2	8.7	1	10.1				
District (ex. Denver)...	8	4	8	3	1	3	3	8	8.9	1	10.1				
Union .....	..	1	1	..	..	..	..	1	7.8	1	8.5				
County .....	..	1	..	..	..	1	..	1	5.	3	7.4				

WOMEN.																	
Schools.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Denver	3	..	3	2	2	4	5	5	3	6	3	4	5	3	3	3	5
Other North Central....	9	16	12	14	13	13	16	14	11	10	10	6	3	7	3	1	1
Other Accredited.....	11	15	12	13	12	4	7	6	5	4	3	1	1	1	1	..	..
Non-Accredited	14	11	10	9	4	4	1	2	1	1	1	..	1	1	..	1	1
District (ex. Denver)...	22	30	27	25	20	16	20	18	10	12	10	6	4	8	4	1	2
Union	7	4	3	4	1	3	..	3	3	..	1	..	..	1	..	1	..
County	5	8	4	7	8	2	4	1	4	3	3	1	1	..	..	..	..

												25 or			
Schools.	18	19	20	21	22	23	24	over	Median	Mode	Aver.				
Denver	5	4	6	1	4	..	4	12	14.3	?	15.1				
Other North Central....	8	4	4	1	2	1	..	3	7.4	?	8.6				
Other Accredited	1	..	2	..	..	..	..	..	4.4	2	4.9				
Non-Accredited .....	..	..	1	..	..	..	..	..	3.25	1	4.4				
District (ex. Denver)...	6	4	5	1	1	1	..	3	5.75	2	7.1				
Union	1	..	1	..	..	..	..	..	4.1	1	5.8				
County	2	..	1	..	1	..	..	..	4.9	?	5.				

TABLE 31.
AVERAGE EXPERIENCE OF FACULTIES IN YEARS, BY SCHOOLS.

	Under 2	2-4	4-6	6-8	8-10	10-12	12 or over
North Central .....	..	1	5	6	12	6	2
Other Accredited .....	..	4	8	13	4	3	2
Non-Accredited 4-Year....	2	4	14	8	7	4	8
District (except Denver)..	..	5	16	21	15	8	10
Union	2	3	3	2	5	3	2
County .....	..	1	8	4	3	2	..

Hardly any of our high schools are entirely in the hands of what can be termed a "green" force, but it is not difficult to find schools with a faculty possessing five to six times the experience of that of other schools. The fair amount of previous experience in all schools helps to offset the dangers of brief tenure pointed out further on.

From the standpoint of vocational guidance all persons, and above all, those who are teaching or intending to teach, are interested in the possibilities of promotion. The stress placed upon experience gives assurance that it counts for something, but for how much? In actual dollars what can a teacher expect to receive for the accumulating years of his experience? This question can never be answered for teaching or any other vocation so nearly absolutely as it can for some phenomenon in which all must participate. In measuring physical growth, for example, one can take measurements until he is satisfied of the fairness of his sampling, barring the fact that there is an elimination by death, which might affect averages. But in teaching there is a constant selection in two directions: (1) competent teachers are leaving because of greater opportunities elsewhere, (2) incompetent ones are being forced out. So it can not be said that the results secured from the records of the present high-school teaching force in the state and placed below in Table 32, are indicative of what any person of either sex will probably receive when he has been teaching a given number of years. It is rather what he will probably receive in a given number of years, *if* he is of the sort not eliminated before that time and *if* he continues his preparation to the extent that the average teacher does. The two variables, experience and continuing preparation, operate constantly.

TABLE 32.
YEARS OF EXPERIENCE IN RELATION TO SALARY.

Median.	1st	2nd	3rd	4th	5th	6th	7th	8th
Men	\$ 875	\$ 950	\$1,030	\$1,075	\$1,075	\$1,025	\$1,383	\$1,175
Women	684	767	812	806	839	930	975	1,003
Average.								
Men	880	945	1,050	1,083	1,124	1,021	1,375	1,250
Women	678	773	898	845	860	960	1,012	1,036

Median.	9th	10th	11th	12th	13th	14th	15th	16th
Men	1,317	1,112	1,420	1,458	1,350	1,187	1,350	1,083
Women	840	1,183	1,250	1,204	1,187	1,075	1,250	1,400
Average.								
Men	1,292	1,179	1,328	1,531	1,395	1,220	1,577	1,228
Women	875	1,134	1,162	1,225	1,180	1,105	1,262	1,333
Median.	17th	18th	19th	20th	21st	22nd	23rd	24th 25th&over
Men	1,550	1,450	1,680	1,525	1,450	1,550	1,550	1,350 1,875
Women ..	1,483	1,175	1,317	1,225	1,250	1,487	1,250	1,437 1,519
Average.								
Men	1,750	1,679	1,750	1,568	1,690	1,450	1,510	1,550 2,017
Women ..	1,367	1,204	1,250	1,232	1,250	1,383	1,250	1,400 1,507

If these facts be plotted as straightened curves, each five-year period being taken as a unit, the following conclusions may be drawn:

(1) Experience, plus continuing preparation, will double the salary of a man in about twenty-five years, of a woman in a little over twenty years.

(2) In general, each five-year period counts for less than the preceding one.

(3) The limit of efficiency (as measured by salary) is not reached inside of twenty-five years for either sex, a fact which tends to justify agitation for pension laws, retirement funds, and any other arrangements tending to produce a stable teaching body.

(4) Women increase in salary absolutely as much as, and relatively more than men. Since the large salaries in a number of supervisory positions, for which women are not considered, help the figures for men, it is plain that there must be at the other extreme a number of men whose experience has not resulted in a typical salary increase. This group, the "dead-wood" of the profession, is the one which keeps up the figures for experience of men in the lower classes of schools.

C. INSTRUCTIONAL WORK.

The third demand upon the teacher is not for potential efficiency, as preparation and experience, but is for "kinetic" efficiency. A certain number of classes are assigned him to teach. There may be other duties, usually there are. But supervising the study hall, coaching athletics, directing a band, glee club, or dramatic organization, watching the playground, doing police duty in the corridor, chaperoning a class party, can not be reduced to definite terms; they do not vary so much from school to school; and some of them rank more or less as recreations according to the interests of the individual.

Three of the variables which constantly interact to determine the demand on a teacher have been considered here: (1) the number of students per teacher, (2) the number of recitations per day, and (3) the number of departments over which the teacher must distribute his energies.

For studying the number of pupils the average attendance has been divided by the number of teachers. It shows the general level of work throughout the year so far as number of pupils affects it. It should be observed, however, that enrollment per teacher is very important. When attendance is very irregular, or students keep straggling into school until past the middle of the year, the extra help which teachers must render stragglers is a heavy tax. Aside from the special help involved, the number of students per teacher is not of much consequence to the teacher except for the routine of grading and the correction of written work. But written work means much in English and laboratory sciences.

TABLE 33.
STUDENTS IN AVERAGE ATTENDANCE PER TEACHER.

Schools.	Under 5	5-10	10-15	15-20	20-25	25 or over	Median	Mode
North Central .....	..	..	1	9	18	2	21.4	20-25
Other Accredited .....	..	3	13	13	3	1	15.2	?
Non-Accredited 4-Year...	2	13	19	6	4	..	11.8	10-15
Short-Course	1	5	5	..	..	..	5.5	?
District .....	..	15	21	20	17	2	15.4	10-15
Union	3	4	9	3	4	1	12.8	10-15
County .....	..	2	8	5	4	..	14.7	10-15

The wide difference between schools according to their rank does not mean so much to the teacher as to the student. Where numbers are so large, there is less of contact between teacher and pupil, less freedom exercised by students in consulting with teachers, and more opportunity for the lagging student to elude the teacher. In this one respect the large school is apparently destined to be always at a disadvantage.

Systems of accrediting have had the effect of grouping accredited schools closely in number of recitations per teacher. Accredited schools have been very considerate of their teachers in keeping within the limit, less perhaps because of the standard for accrediting than because teachers are very sensitive over the assignment to them of extra classes. Teachers handling classes, such as drawing and manual training, that work in double periods only, may have but three classes per day and thus reduce the average for the school. Over half the accredited schools have an average of less than five, but less than half have as yet gone below six as the maximum. The only serious condition is found in about a dozen non-accredited schools, where the maximum runs above seven. Four or five of these have two teachers; the others have but one teacher, who carries the whole load himself or receives a little assistance from some grade teacher. Four district and five union schools have teachers with ten or more classes per day.

The last point, number of departments in which the teacher works, might almost be treated under "Supervision" instead of under "Teaching

Staff", so fully does it depend on foresight of superintendent or principal. One of the most distressing qualitative findings of this survey was the complacency of some principals of small schools, who seem never to have heard or dreamed of departmental instruction. It is true that some principals believe it better for a teacher to work in more than one department. Some others believe that every teacher should have a class in English, and a few hold that anybody can teach History. These propositions are not cited at this time for ridicule, refutation, or endorsement. They are merely a part of the facts.

TABLE 34.

AVERAGE NUMBER OF DEPARTMENTS WORKED IN BY EACH TEACHER.

Schools.	Under 1.5	1.5-2.	2-2.5	2.5-3.
North Central	12	14	5	1
Other Accredited	1	9	12	9
Non-Accredited 4-Year .....	..	1	9	7
Short-Course .....	..	..	..	..
District	11	19	14	11
Union .....	..	3	5	2
County	2	2	7	4
	3-3.5	3.5 or over	Median	Mode
North Central .....	..	..	1.64	1.5-2.
Other Accredited	2	1	2.79	2-2.5
Non-Accredited 4-Year	13	21	3.35	over 3.5
Short-Course	3	14	4.1	over 3.5
District	15	23	2.64	?
Union	1	11	3.4	over 3.5
County	2	2	2.39	2-2.5

In interpreting the above table the following departments should be understood: English, Greek, Latin, German, French, Spanish, History, Mathematics, Science, Commercial, Household Arts, Physical Culture, Manual Arts, and Teacher Training. Music so much of the time is "led" rather than "taught" that it was not considered. Public Speaking and Debating were counted as English; Commercial Correspondence and Business English as either English or Commercial; Commercial Arithmetic as either Mathematics or Commercial; Commercial Geography as either Science or Commercial; Civics, Economics and Industrial History as History.

The bi-modal distribution of district and union schools arises from the long distance between the modes for accredited and non-accredited schools. Too few county schools are non-accredited to produce the same result. It is principally in the much greater number of departments to familiarize himself with and the numerous recitations to be conducted that the less prepared and less experienced teacher of the small school finds the odds against him.

D. TENURE.

Annually teachers' agencies and appointment bureaus register thousands of teachers, either because the teachers do not desire to return to their present positions or because they are not satisfactory to their employers. Not seldom is the dissatisfaction mutual. Table 35 shows tenure by years for men and women, and Table 36 summarizes those results.

TABLE 36.
YEARS IN PRESENT POSITION.

Schools.	Median		Mode		Average		Teachers	
	M.	W.	M.	W.	M.	W.	M.	W.
Denver	8.3	6.7	3	2	9.1	8.5	62	99
Other North Central.....	2.4	2.5	1	1	4.	3.6	146	179
Other Accredited	1.6	1.6	1	1	2.3	2.4	72	79
Non-Accredited 4-Year	1.5	1.2	1	1	2.1	1.5	60	71
Short-Course	1.4	1.25	1	1	1.5	1.2	13	10
District (except Denver)....	1.9	1.9	1	1	3.5	2.9	219	258
Union	1.3	1.6	1	1	1.8	1.9	34	36
County	1.5	1.6	1	1	2.1	2.2	40	55

The men have a slightly longer tenure in general, but the most conspicuous difference is in the non-accredited high school, where the men are mostly principals. The salaries there are too low to hold a qualified teacher in the rank and file more than a year. If the principals and superintendents should be omitted,* the women would have better tenure on the whole than the men. The correlation of tenure for both sexes with the recognized standing of the schools is perfect. While this almost annual revolution continues in the faculty of the small school, in marked distinction to conditions abroad, the small school must continue to suffer.

But, as shown in the section entitled "Experience", conclusions relative to the teaching body as a whole by classes of schools do not hold with reference to the various schools of any one class. It is possible that some schools are very much lacking in stability of faculty, whereas others of the same class stand very high.

* For tenure of superintendents and principals, see page 84.

TABLE 37.
AVERAGE TENURE IN YEARS BY SCHOOLS, EXCLUSIVE OF SUPERINTENDENT AND PRINCIPAL.

Schools.	1-1.5	1.5-2.	2-2.5	2.5-3.
North Central (except Denver).....	4	5	3	5
Other Accredited	10	9	6	5
Non-Accredited 4-Year	27	3	10	..

TABLE 37.—Concluded.

Schools.	3-3.5	3.5-4.	4 or over	Schools
North Central (except Denver).....	6	1	7	31
Other Accredited	3	..	1	34
Non-Accredited 4-Year	1	..	1	42

There are extremes then in all classes of schools. The single non-accredited school of high tenure is a union school taught by a man and his wife. The "other accredited" school of highest tenure is a county school which has had its principal for six years and his two assistants for three and seven, respectively. The principal receives a liberal salary for a school of that size, and the average salary of the assistants is higher than for any school in the state outside Denver and Colorado Springs. All three instructors remain another year. Taking the four North-Central-Association schools of lowest tenure, the superintendents of two of them were serving their first year, and the superintendent of a third was in his second year. Such wholesale changes are almost sure signs of disaster, past or impending.

The shifting of our teaching population may be more or less rapid than in other states. Other surveys will be necessary to determine this, but it may not be amiss to point out one reason for tenure being as low as it is. That reason is the cosmopolitan character of our teaching force. This survey showed in our high schools teachers who hold degrees from 149 different colleges in 30 states of this country and two foreign countries. They have been schooled in the elementary schools of 30 states of the Union and five foreign countries.

An endeavor was made to analyze somewhat the reasons for changes of location. The principal or superintendent was asked to give the reason for each loss from the faculty of the high school now under his direction at the close of school in 1913. Regarding one's own predecessor the situation thus created was delicate, but no better means seemed to be offered. As against eighty-three teachers serving their first year in non-accredited four-year schools, something was learned of the reason for the removal of fifty of their predecessors. And for the removal of about a hundred teachers in accredited schools, 117 reasons were given. The mutual dissatisfaction of teacher and employers mentioned above is responsible for the excess.

"Unsatisfactory service" was the cause alleged in half the cases for the non-accredited schools, but it is only half as important relatively in accredited schools. This suggests that the small school either does not select its teachers intelligently or does not pay enough to secure competent ones. This explanation is substantiated by the fact that "Better salary" is cited as a reason for change nine times in non-accredited schools and thirty-three times in accredited schools. It is the smaller accredited school then from which teachers are being picked by large schools as soon as they are broken in. The reason third in frequency was "Returned to school". It explains about ten per cent of the changes. The fourth reason is "Married", which would really rank third, if it operated similarly on both sexes. Less frequent reasons were "Change of occupation", "Desire to be near relatives", "Poor health", "Sickness in family".

Some investigation also was made of the conditions under which teachers are employed, to see whether that might furnish a clue to the many cases of "Unsatisfactory service". It was found to be the custom to see teachers before employing them, especially in the better organized schools. The question then was put, "Do you visit them (the prospective teachers) at their work, or ask them to visit you"? To this the answer was "The latter" in over three-fourths of the cases. The response was "Both", or "The former, if possible", in equal numbers of the remaining cases. School people in conference very generally recognized the inefficiency of the present method of choosing teachers "on sight" or unseen. The false impressions made by good looks, charming manners, faultless clothes, and fine recommendations can never give the assurance that comes from seeing a teacher stand before a class and teach it well. A limited amount of money to defray the traveling expenses of principals who know where to look for teachers, is wisely expended.

One common condition of employment is experience. Non-accredited schools do not pay sufficient salaries to permit them to insist upon this very often, but the larger number of the accredited schools can and do demand it. This reduces the likelihood of failure in accredited schools. Again, when experience is demanded, the difference in salaries still is operative, because the accredited school can pay for successful experience, while the non-accredited school usually can not. A teacher who has taught

but one year each in eight schools goes into a ninth school, non-accredited, of course, to teach his ninth year at the same salary he last received.

Teachers' agencies have by some been blamed for many of the maladjustments and failures in the teaching corps. To a question as to the use made of agencies, the answers were "None" twenty-four times, "A last resort" seven times, "Seldom" eighteen times. Thirty-four schools used agencies to secure candidates and recommendations, but very few would admit that they hired teachers on the representations of an agency. The inaccessibility of many parts of the State establishes a serious need for agencies, commercial or not, that will act in a really professional capacity in furnishing teachers. In no state are routes more circuitous, travel more slow and expensive. Candidates will not hazard a journey to some places to secure a position that is not worth the cost of the extra trip. An agency fee is cheaper. On the other hand, the board will not allow a principal his time or expenses to seek a teacher, or, worse still, sits in judgment itself on a question that belongs to the principal.

Another item that affects tenure is the "Wanderlust". Tramps are everywhere, but newer portions of the country with attractions which are unusual or seem unusual at a distance, have more than their share. Colorado is the gateway through which "tramp" teachers find it handy and desirable to pass on their way either east or west. Many confess a desire for change. One *young* woman, who was succeeding well in her present position, claimed her early education in Michigan and had already taught in New Hampshire, Minnesota, North Dakota, and Washington. The isolation of the mountain country, the extremely high cost of living, and the altitude, if over seven thousand feet, all have their influence to cut short the teacher's stay, more especially if he came partly to see the country.

While the fate of the teacher who has really failed is of some importance, all are interested in the destination of the teacher who changes for a better salary. Nearly all those who changed for that reason in the spring of 1913 were traced geographically, but not educationally. Presumably, they continue in high-school work. Colorado retained twenty-seven out of forty-one. Of the other fourteen, only five went farther east. States to the west are throwing out strong inducements to teachers.

E. SALARY.

The salaries paid teachers in the long run give the estimate placed by the community on its teachers and the estimate placed by the teachers on themselves. The general truth of the principle is not controverted by its failure to reach certain cases. One's own health, the health of relatives, or the proximity of one's other interests to the school, have given to Colorado, at half their value, a number of teachers worth from \$2,000 to \$3,000.

TABLE 38.

DISTRIBUTION OF ANNUAL SALARIES EXCLUSIVE OF CHIEF SCHOOL OFFICER.

Schools.	Under \$600		\$600- 700		\$700- 800		\$800- 900		\$900- 1000		\$1000- 1100	
	M.	W.	M.	W.	M.	W.	M.	W.	M.	W.	M.	W.
Denver .....	..	..	..	..	2	4	..	..	1	1	..	4
Other North Central	2	1	3	5	16	6	34	21	46	19	25	..
Other Accredited	1	2	16	4	33	7	19	14	7	4	2	..
Non-Accredited	1	7	2	24	18	2	3	2	1	..	1	..
District (except Denver)...	1	6	2	32	10	44	11	32	24	47	21	25
Union	3	2	7	..	11	1	7	5	..	1	1	..
County	1	1	4	1	12	3	17	8	7	1	2	..
Denver	4	6	6	17	4	8	19	30	6	19	9	10
Other North Central	10	18	13	17	7	8	7	5	13	1	7	..
Other Accredited	5	..	1	6	1	..	1	..	..	..	..	..
Non-Accredited .....	..	..	..	..	..	..	..	..	..	..	..	..
District (except Denver)...	9	18	12	17	6	8	7	5	13	1	7	..
Union	1	..	1	..	1	..	..	..	..	..	..	..
County	5	..	1	6	1	..	1	..	..	..	..	..
Denver	2	1	6	..	1	..	..	..	..	3	..	..
Other North Central	1	..	1	..	1	..	2	..	1	..	..	..
Other Accredited .....	..	..	..	..	..	..	..	..	..	..	..	..
Non-Accredited .....	..	..	..	..	..	..	..	..	..	..	..	..
District (except Denver)	1	..	1	..	1	..	2	..	1	..	..	..
Union .....	..	..	..	..	..	..	..	..	..	..	..	..
County .....	..	..	..	..	..	..	..	..	..	..	..	..

Table 38 gives the distribution of salaries for all kinds of schools. It excludes the chief school officer of the district. Men and women are listed separately. The large difference between the salaries of the sexes renders it valueless to compare the whole teaching force of any school or class of schools with that of another, since one school might appear to have generally higher salaries due to the employment of a larger percentage of men. The two phenomena of salary and sex distribution would then be confused.

TABLE 39.

SALARIES, EXCLUSIVE OF CHIEF SCHOOL OFFICER.

Schools.	Median.		Mode.	
	Men.	Women.	Men.	Women.
Denver	\$1480	\$1435	\$1400-1500	\$1400-1500
Other North Central	1155	970	900-1000	900-1000
Other Accredited	953	776	900-1000	700-800
Non-Accredited	775	684	?	600-700
District (except Denver) ..	1077	908	900-1000	900-1000
Union	960	741	900-1000	700-800
County	975	844	900-1000	800-900
Total (except Denver).....	...	...	.....	.....

TABLE 39.—Concluded.

Schools.	Average.		Teachers, Including Supt.			
	M.	W.	M.	W.	M.	W.
Denver	\$1568	\$1390	63	100	64	100
Other North Central.....	1220	997	115	175	145	176
Other Accredited	963	811	39	84	73	84
Non-Accredited	772	713	9	54	50	61
District (except Denver)..	1188	922	129	235	195	238
Union	975	740	12	29	33	34
County	1018	915	22	49	40	49
Total (except Denver) ...	...	...	163	313	268	321

The summaries of Table 39 scarcely call for further comment than that the salaries explain the differences in tenure. The salaries in district, union and county schools differ no more than the relative proportions of North-Central-Association, small accredited and non-accredited schools composing each would lead one to expect. The effect of the salary in effeminizing the teaching force is evident. Few married men or men of a domestic turn of mind can keep pace with the demands in education, and still live on \$60 to \$80 per month for the year. The only obstacle to practically complete feminization of the smaller schools is the higher salary paid to the male principal or superintendent. When he is taken into consideration, the lower schools are in general as much under masculine influence as any. Nevertheless five four-year schools were run wholly by women, one in a district system of sixteen teachers with not a single man in it. On the other hand, seven four-year schools were operated exclusively by men.

Considering schools as units, excessive amounts of variation appear between schools of the same class in Table 40. Small accredited and the non-accredited schools are more nearly homogeneous than North-Central-Association schools, due to less variety in size and complexity. Only the chief school officer of the system is omitted. If the high-school principal, where some one is so designated, also were omitted, the variation would not be diminished perceptibly with reference to women, since very few act as high-school principals. Nor would the situation be changed to any great degree with respect to men. In a large school the much larger salary of the high-school principal has a proportionately greater weight to overcome than in the smaller school, so it cannot swing the average far.

TABLE 40.
AVERAGE SALARIES OF HIGH-SCHOOL ASSISTANTS.

Schools.	Under \$600		\$600-800		\$800-1000	
	M.	W.	M.	W.	M.	W.
North Central .....	..	..	2	5	8	20
Other Accredited .....	..	1	4	21	17	6
Non-Accredited 4-Year	1	4	5	28	4	2
District	1	3	8	35	18	19
Union .....	..	2	2	11	3	2
County .....	..	..	1	8	8	7

Schools.	\$1000-1200		\$1200-1400		\$1400 and over	
	M.	W.	M.	W.	M.	W.
North Central	9	6	6	2	6	..
Other Accredited	1	2	1	1	1	..
Non-Accredited 4-Year .....	..	1	..	..	..	..
District	8	8	6	2	6	..
Union	1	..	..	..	..	..
County	1	1	1	1	1	..

Medians and averages are not given because they would be inexact when based on such broad groupings. The medians run somewhat lower than those of Table 39, from a few dollars up to \$65.

Teachers work in all possible combinations, but the opportunities for departmental work are very different. The differences by sex are shown in Table 41. No superintendent or high-school principal was considered, but several of the teachers of "special" subjects throughout all grades of the school were included. To be regarded as high-school teachers all others had not over one class each outside the department in which their principal work lay, and spent over half their time in the high school.

TABLE 41.
SALARIES BY SEX IN VARIOUS DEPARTMENTS.

Salary.	English.		German.		Spanish.		Latin.		History.		Mathe- matics.	
	M.	W.	M.	W.	M.	W.	M.	W.	M.	W.	M.	W.
\$600-700 .....	..	..	..	..	..	..	..	..	..	..	..	2
\$700-800 .....	..	8	..	..	..	..	..	1	..	1	..	3
\$800-900 .....	..	11	..	3	..	..	..	4	..	..	1	3
\$900-1000	1	12	..	1	..	..	..	5	4	4	3	5
\$1000-1100	2	8	..	1	..	..	1	1	..	2	2	2
\$1100-1200	2	4	..	1	..	2	..	4	..	3	3	3
\$1200-1300 .....	..	9	..	3	..	1	..	1	1	2	2	9
\$1300-1400 .....	..	4	..	2	..	..	..	3	..	4	3	1
\$1400-1500	2	10	..	2	1	..	..	1	4	3	2	2
\$1500-1600	2	1	1	3	..	..	..	2	1	..	..	4
\$1600-1700	1	1	..	..	..	..	..	..	..	..	1	2
\$1700-1800 .....	..	2	..	1	..	..	1	2	2	..	..	1
\$1800-1900 .....	..	..	..	..	..	..	..	..	..	1	..	..
\$1900-2000 .....	..	..	..	..	..	..	..	..	..	..	..	..
\$2000-2100 .....	..	..	..	..	..	..	..	..	..	..	1	..
\$2100-2200 .....	..	..	..	..	..	..	..	..	..	..	..	..
Totals	10	70	1	17	1	3	2	24	12	20	18	37
Median—Men	\$1300		1550		1450		1400		1425		1204	
Median—Women	\$1050		1283		1175		1125		1204		1206	
Average—Men	\$1300		1550		1450		1400		1325		1244	
Average—Women	\$1109		1262		1183		1162		1210		1166	

TABLE 41.—Concluded.

Salary.	Science.		Man. Tr. and Mech. Drawing.		Drawing and Design.		Commer- cial.		Dom. Science.		Phys. Educa- tion.	
	M.	W.	M.	W.	M.	W.	M.	W.	M.	W.	M.	W.
\$600-700	1	..	..	..	..	..	..	1	..	3*	..	..
\$700-800	1	1	1	..	2	..	..	3	..	3	..	..
\$800-900	1	..	..	..	..	..	..	3	..	6	..	..
\$900-1000	5	1	2	..	..	1	8	1	..	3	..	..
\$1000-1100	9	1	1	..	..	1	1	..	..	1	1	..
\$1100-1200	5	1	1	..	..	..	3	2	..	4	1	..
\$1200-1300	10	1	3	..	1	1	1	1	..	3	..	..
\$1300-1400	3	..	1	..	..	..	2	1	..	..	..	..
\$1400-1500	3	..	3	..	3	7	3	1	..	2	..	1
\$1500-1600	4	..	5	..	..	3	3	..	..	1	1	..
\$1600-1700	4	..	..	..	..	..	..	..	..	..	..	..
\$1700-1800	1	..	..	..	1	1	..	..	..	..	..	..
\$1800-1900	2	..	..	..	..	..	..	..	..	..	..	..
\$1900-2000	1	..	..	..	..	..	..	..	..	..	..	..
\$2000-2100	1	..	..	..	..	..	..	..	..	..	..	..
\$2100-2200	2	..	1	..	..	..	..	..	..	..	..	..
Totals	53	5	18	..	7	14	21	13	..	26	3	1
Median—Men	\$1245		1383		1416		1150		....		1150	
Median—Women	\$1050		....		1443		883		967		1450	
Average—Men	\$1608		1344		1264		1193		....		1250	
Average—Women	\$1030		....		1414		981		992		1450	

The women have practically a monopoly on language work outside of English. They also show a great numerical superiority in Mathematics and lead nearly two to one in History. Science has been almost wholly appropriated by men. Manual Training and Shop, with which Mechanical Drawing is often combined, is a field for men. Where only Drawing, Freehand or Mechanical, is taught, combined sometimes with Design, the women forge ahead. Domestic Arts has been preempted by the women, Agriculture by the men. The latter is not separately listed, because there are only three men that could be designated teachers of that subject. Their salaries fall below the norm of teachers of Science, with whom they have been included. Commercial courses and Physical Education are divided between the sexes somewhat as might have been expected. Even when superintendents have been omitted, women still fill a greater number of "general utility" places than do men in proportion to numbers of each sex engaged. Preparation for departmental work instead of general work is less safe for a woman than for a man.

* Two received between \$500 and \$600.

Medians and averages indicate the remuneration in the different fields. Where less than a half-dozen cases are the basis of the summary, the probable error becomes large (e. g., men teachers of Latin), unless the measurements are closely grouped (e. g., women teachers of Spanish). Though the salaries for men in general have been found to exceed those of women by a wide margin, the women receive higher salaries than men in Manual Arts and crowd the men closely in Mathematics. As a result of the deficient preparation demanded, commercial work and Domestic Arts are most poorly paid for women, and the commercial department presents the poorest opening for men. If men of practical business experience are to be secured for this work salaries must be moved up considerably. Otherwise the school can secure only the "beaten" man from the business world; the competition is very direct. Opportunities for young men in Manual Arts are as good as anywhere, and a number of men who have succeeded as contractors or artisans have entered this field. Women do not seem to have proven highly successful as teachers of Science. Their salaries in that line are low. If inclined to the traditional academic subjects, men will see most of promise in History and Science, and women will be attracted toward German and History.

The salaries dealt with in this departmental analysis seem very high in comparison with the general level of salaries, because departmental teachers are not found so often in the smaller schools with their smaller salaries. It may also be well to observe that all medians and averages in this section on "Salary" are higher than the actual medians and averages. The group, \$700-800, for example, includes those receiving \$700, but not those receiving \$800. But, especially where the salaries are highest, the annual salary is very often so many hundreds of dollars. Thus the actual average of any group is not much above its inferior limit, while the estimates throughout this treatment have regarded it as midway between the inferior and superior limits.

The salary schedule is related to the various other aspects of the teaching staff almost as closely as the salary itself, depending on the length of time it has been in effect and the rigidity with which it is adhered to. The small majority of the accredited schools have now a schedule of some sort, but only three non-accredited schools have defined their policy. It does not follow that all the others pay an invariable salary for a certain piece of work, but in the absence of a salary schedule, there are many which do not increase. This is ruinous to stability in the small schools, deadening to the new teachers, discouraging to the old. The incentive is to "hold on" until a better chance is offered. Nevertheless, it may also be said that a salary schedule based purely on term of service can exert an equally bad and similar effect. The attitude of teachers in some schools where salary increase is quite automatic, their failure to continue their preparation along professional lines, and their personal statements in some cases are the authority for such an opinion.

The most common form of salary schedule still is based almost absolutely on tenure. There is a minimum for beginners with a stated increase

if his efficiency is such as to secure re-election, until a certain maximum is attained. "Increase at option of board", "Increase according to merit", "Increase if satisfactory", etc., do not in themselves constitute a salary schedule unless certain terms are defined. The data can best be given in tabular fashion.

REGULAR INCREASE EACH YEAR OF SERVICE:

Monthly Salary.

\$70-\$75-\$80—1 school.
 \$70-\$125 by \$5 increases—1 school.
 \$75-\$80-\$85—2 schools.
 \$75-\$90 by \$5 increases—2 schools.
 \$75-\$95 by \$5 increases—1 school.
 \$80-\$85—1 school.
 \$80-\$85-\$90 and thereafter at option of board—1 school.
 \$85-\$90-\$95—2 schools.
 \$85-\$100 by \$5 increases—2 schools.
 \$90-\$95-\$100—2 schools.
 \$90-\$105 by \$5 increases—1 school.
 \$90-\$95-\$100-\$111—1 school.

Annual Salary:

\$660-\$960 by \$50 increases—1 school.
 \$800-\$1100 by \$100 increases—1 school.
 \$800-\$1000 minimum according to experience and training. By \$50 increases to \$1200, thereafter by special action of board—1 school.
 \$900 first year, \$1000 second year—1 school.
 \$950-\$1200 by \$50 increases on recommendation of superintendent for demonstrated efficiency—1 school.
 \$960-\$1080-\$1200, if promoted at all—1 school.
 \$900-\$1400 for women, \$1000-\$1600 for men, by \$96 increases—1 school.
 \$1000-\$1300 by \$100 increases, entrance to higher class on recommendation of principal and superintendent with \$100 increases to \$1600, repeat as before to limit of \$2200—1 school.

MINIMA AND MAXIMA ONLY FIXED:

Minima.

\$75—3 schools.
 \$80—1 school.
 \$95—1 school.

Maxima.

\$900 for women, \$990 for men—1 school.

EXCEPTIONS:

Principal \$100-\$115—1 school.
 Teacher of Agriculture \$1000-1500—1 school.
 Special teachers given higher salary—1 school.

F. PERSONALITY.

The perfectly tangible factors connected with teaching staff have been considered, but this section should not be closed without reference to that element in all teachers for which supervisors are looking, but which has not been fully defined, not to say analyzed. Several studies have been attempted of personality in teachers by the "qualities-of-merit" route, but much pioneer work is here to be done before the fundamental problem of teacher rating can be so attacked as to afford any satisfaction to raters and rated or any ground for agreement between them.

Superintendents and principals were asked to select the teachers whom they would least like to lose from their force and run the risk of replacing. The number of assistants selected depended upon the number on full time, one selection being made from a force of two to four assistants, two from a force of four to ten, three from a force of ten to twenty, and four from a force of over twenty. In this way it was expected to get a list of teachers of greatest general serviceability and at the same time the rarest qualities. To avoid an artificial splitting up of personality, the supervisor was then asked to indicate from one to three qualities, which in his opinion contributed most to the efficiency of each teacher selected.

That there might be some uniformity to answers, eight general rubrics were printed on the sheet and termed a "suggestive list", to which raters were invited to add as they saw fit. The "suggestive list" or rubrics appears below, preceded by letters. The number of times each trait was mentioned is placed to the right:

a. Ability to maintain discipline.....	71
b. Energy	55
c. Health	23
d. Interest in extra-classroom activities.....	50
e. Personal appearance (physical)	17
f. Sense of humor	24
g. Skill in instruction	88
h. Sympathy and adaptability	58
Scholarship	12
Interest in work	8
Tact	3
Loyalty	3

Ability to get work from students, industry, initiative, leadership, social standing, devotion to school, and dependability were each mentioned twice. A dozen others secured mention once each. Some of the scattering traits might have been crowded under one or another of the main rubrics, but the general position of the main headings would not have been affected in the least. Very large differences appear between traits that are commonly mentioned in connection with merit. Scholarship was not placed in the suggestive list because it was sought to place the emphasis of this

study on native rather than acquired traits. The two dominant traits, *a* and *h*, are the ones most difficult to gauge by the ordinary personal interview.

Though the teachers were indicated on the ratings by letters instead of names to make the work as impersonal as possible, several facts were learned regarding most of the group of approximately a hundred. There were twenty-eight men and sixty women reported. In this same proportion the sexes enter into the teaching force as a whole, supervisors excepted. But the conclusion that a man is as likely as a woman to be an "A-1" teacher, may be impaired somewhat by the fact that all the rating was done by men. Do men see the virtues of men just as plainly as they do those of women? Personal views of this question will modify for each person the meaning of the figures just given.

The tenure of this group of teachers of merit seems very little higher than that of teachers in general. Four-fifths of the whole body of teachers have been less than five years in their present positions, three-fourths of the teachers of merit have a tenure of less than five years. But another and closer comparison is that of the tenure of the selected teachers with that of their fellow faculty members. Fifty-eight have been longer in their schools than the others on an average, and thirty-three have not been there so long as the others. Schools do show their appreciation of merit by giving somewhat better tenure.

However, it may be that the excellent teacher moves on rapidly because of salary inducements. The median salary of this group is \$1000, the mode \$800-900, the average about \$1050. Considering that few were rated from non-accredited schools because there were not two assistants on full time, one must compare the salaries of this group with those of men and women jointly in accredited schools (see Table 39). The excellent teacher is not receiving on the whole a higher salary than his fellows. But if the more direct comparison is made once more, it is found that the rated teacher is above the average of his faculty in sixty-five cases, and below in twenty-eight. If the comparison be with faculty members of his own sex, the figures remain practically unchanged.

In total teaching experience the median for the teachers rated is about eight years, the average some nine and a half years. This is considerably above similar figures for the entire teaching force. The conclusion is the same when the comparison is made between the rated teacher and the average of the faculty to which he belongs. Fifty-eight lie above the average of their faculties, thirty-eight fall below.

In preparation, the high-class teacher also has a clear advantage. Fifty-two times he exceeds the average of his faculties, and only nineteen times is he exceeded by it. In twenty-six cases there is no difference.

V. THE COURSE OF STUDY.

Great difficulty was experienced in ascertaining the course of study of many schools. In the small ones there has been no adoption, or if there has been one, it lies unknown in the minutes of some board meeting. The present administration, which is young enough, has proceeded in its own way, adding here and eliminating there. In some schools, accredited and non-accredited, ambitious outlines have been printed, showing various units that have never been offered. This has sometimes tended palpably to deceive people inside and outside the district as to the opportunities furnished by the school. For this survey announcements that savor of fake advertising have not been consulted. Courses are reported as they are, not as it is hoped they may be.

A. OFFERINGS.

The courses of nearly all four-year, 6 three-year, 24 two-year, and 61 one-year schools were obtained. Wherever the totals of the following table fall short of these figures, it should be understood that returns were perhaps incomplete from a few schools:

TABLE 42.
NUMBER OF SCHOOLS BY TOTAL OFFERINGS.
Accredited Non-Accredited

Units:	(except Denver)	4-Year	3-Year	2-Year
Under 8 .....	.....	.....	.....	2
8-9 .....	.....	.....	.....	18
9-10 .....	.....	.....	.....	1
10-11 .....	.....	.....	.....	.....
11-12 .....	.....	.....	2	1
12-13 .....	.....	.....	1	1
13-14 .....	.....	.....	2	1
14-15 .....	.....	.....	.....	.....
15-16 .....	.....	2	.....	.....
16-17	2	14	.....	.....
17-18	3	2	.....	.....
18-19	3	7	.....	.....
19-20	5	2	.....	.....
20-21	11	5	.....	.....
21-22	7	1	.....	.....
22-23	7	2	.....	.....
23-24	5	.....	.....	.....
24-25	2	.....	.....	.....
25-26	1	1	.....	.....
26-27	2	.....	.....	.....
27-28 .....	.....	.....	.....	.....

TABLE 42—Concluded.

Units:	Accredited		Non-Accredited	
	(except Denver)	4-Year	3-Year	2-Year
28-29	4	....	....	....
29-30	1	....	....	....
30-31	2	....	....	....
31 and over.....	3	....	....	....
Total	58*	36	5	24

The type for two-year and non-accredited four-year schools is clearly apparent, but not for accredited schools, since these vary enormously in teaching force. There is no justification for the smaller schools showing the amount of variation from the mode that a few do. It means that some schools are piling up work on teacher and students to the utter disregard of standards. In the one-year schools several offer less than four subjects, and several others offer five or six. This larger number of subjects does not mean that the principle of election is being applied but rather that all students pursue that many subjects as against four or four and a fraction in the more fully developed schools.

TABLE 43.

NUMBER OF SCHOOLS BY OFFERINGS IN DIFFERENT DEPARTMENTS

Two-Year Schools:	Length of Course in Years.†								Total
	Under 1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	
Latin .....	..	5	13	..	..	..	..	..	18
German .....	..	4	2	..	..	..	..	..	6
English .....	..	3	19	..	..	..	..	..	22
History .....	..	2	19	..	1	..	..	..	22
Mathematics .....	..	..	20	1	..	..	..	..	21
Science	1	4	2	..	..	..	..	..	7
Commercial	2	1	..	..	1	..	..	..	4
Manual Training.....	..	..	1	..	..	..	..	..	1
Mech. and Freehand									
Drawing .....	..	1	..	..	..	..	..	..	1
Three-Year Schools:									
Latin .....	..	..	4	2	..	..	..	..	6
German .....	..	2	..	..	..	..	..	..	2
English .....	..	1	..	5	..	..	..	..	6
History .....	..	1	4	1	..	..	..	..	6
Mathematics .....	..	..	3	3	..	..	..	..	6
Science	1	2	2	..	..	..	..	..	5
Commercial	1	2	..	..	..	..	..	..	3

* Denver schools and a few others not reported.

† "Length of course in years" is to be distinguished from units offered. For some subjects it is nearly the same, for others, quite different.

TABLE 43—Concluded.

Non-Accredited 4-Yr. Schools:	Length of Course in Years.							Total
	Under 1	1-2	2-3	3-4	4-5	5-6	6-7	
Latin .....	..	2	18	11	16	..	..	47
German .....	..	10	22	3	..	..	..	35
French .....	..	2	..	..	..	..	..	2
Spanish .....	..	1	1	..	..	..	..	2
English .....	..	1	4	8	33	..	..	46
History .....	..	6	24	18	2	..	..	50
Mathematics .....	..	1	16	31	1	..	..	49
Science .....	..	4	21	15	6	2	1	49
Commercial	8	13	6	..	2	..	..	28
Manual Training	1	3	2	..	4	..	..	10
Mech. & Freehand Drw'g. ..	..	1	1	..	..	..	..	2
Domestic Arts .....	..	3	..	..	3	..	..	6
Teacher Training	2	2	..	..	..	..	..	4

Accredited Schools:

Greek .....	..	..	1	1	..	..	..	2
Latin .....	..	..	11	4	45	..	..	60
German .....	..	1	38	6	14	..	..	59
French .....	..	..	1	1	..	..	..	2
Spanish .....	..	..	7	..	..	..	..	7
English .....	..	..	..	7	54	..	..	61
History .....	..	..	8	34	19	..	..	61
Mathematics .....	..	..	7	49	7	..	..	63
Science .....	..	1	6	21	17	6	3	55
Commercial .....	..	11	7	6	4	4	3	5* 40
Manual Training .....	..	8	8	..	4	..	..	20
Mech. & Freehand Drw'g. ..	..	5	3	..	6	..	..	14
Domestic Arts	3	12	6	3	5	..	..	29
Teacher Training	9	5	..	..	..	..	..	14

These statistics define certain practices as dominant, e. g., the offering of four years of English, of either two or four years of a foreign language, of three years of Mathematics. There is some agreement in these respects as to what constitutes a "well-balanced course of study". They show with equal plainness that there is less agreement as to the place of History, and that there is no agreement as to the place of Science, except in short-course schools, where it is a sort of fifth choice. On all vocational subjects there is still wider disagreement.

* Two of the five offer eight years of work.

TABLE 44.

NUMBER OF SCHOOLS BY OFFERINGS IN DIVISIONS OF DEPARTMENTS.

One-Year Schools:	Length of Course in Years						Total
	Under .5	.5-1	1-1.5	1.5-2.	2.-2.5	2.5 and over	
History:							
Ancient	42	..	..	..	42
Medieval and Modern..	1	..	..	..	1
General	4	..	..	..	4
Mathematics:							
Algebra	58	..	..	..	58
Mental Arithmetic	1	..	..	..	1
Science:							
Agriculture	5	..	..	..	5
Botany	2	..	..	..	2
Elementary Science	1	..	..	..	1
Physics	1	..	..	..	1
Physiology	1	..	..	..	1
Physical Geography....	19	..	..	..	19
Commercial:							
Bookkeeping	3	..	..	..	3
Commercial Geography.	2	..	..	..	2
Two-Year Schools:							
History:							
Ancient	19	..	..	..	19
Medieval and Modern...	..	1	17	..	..	..	18
General	2	..	..	..	2
English	1	2	..	..	..	3
American	2	1	..	..	..	3
Civics	1	1	..	..	..	2
Mathematics:							
Algebra	17	2	3	..	22
Plane Geometry	2	18	..	..	..	20
Science:							
Agriculture	2	..	..	..	..	2
Botany	2	2	..	..	..	4
Elementary Science	1	..	..	..	1
Physical Geography....	..	2	2	..	..	..	4
Physiology	1	..	..	..	..	1
Zoology	1	..	..	..	..	1
Commercial:							
Bookkeeping	2	..	..	1	..	3
Arithmetic	1	..	..	..	..	1
Typewriting	1	..	1

TABLE 44—Continued.

Three-Year Schools:	Length of Course in Years						Total
	Under .5	.5-1	1-1.5	1.5-2.	2-2.5	2.5 and over	
History:							
Ancient .....	..	1	5	..	..	..	6
Medieval and Modern..	..	..	3	..	..	..	3
English .....	..	..	3	..	..	..	3
American .....	..	1	..	..	..	..	1
Mathematics:							
Algebra .....	..	..	3	2	1	..	6
Plane Geometry.....	..	..	6	..	..	..	6
Solid Geometry .....	..	1	1	..	..	..	2
Science:							
Agriculture .....	..	2	..	..	1	..	3
Botany .....	..	1	..	..	..	..	1
Elementary Science....	..	1	..	..	..	..	1
Physical Geography....	..	4	..	..	..	..	4
Physics .....	..	..	1	..	..	..	1
Zoology .....	..	1	..	..	..	..	1
Commercial:							
Arithmetic .....	..	1	1	..	..	..	2
Commercial Geography..	..	1	..	..	..	..	1
Non-Accredited 4-Year Schools:							
History:							
Ancient .....	..	1	33	..	..	..	34
Medieval and Modern..	..	1	24	..	..	..	25
General .....	..	1	15	..	..	..	16
English .....	..	17	6	..	..	..	23
American .....	..	16	6	..	..	..	22
Civics .....	..	15	1	..	..	..	16
Economics	1	6	1	..	..	..	8
Mathematics:							
Algebra .....	..	..	10	28	9	..	47
Plane Geometry .....	..	1	44	..	..	..	45
Solid Geometry	1	25	2	1	..	..	29
Trigonometry	1	1	..	..	..	..	2
Arithmetic .....	..	1	1	..	..	..	2
Science:							
Agriculture .....	..	7	6	..	1	..	14
Astronomy .....	..	1	..	..	..	..	1
Biology .....	..	4	2	..	..	..	6
Botany	1	19	6	..	..	..	26
Chemistry .....	..	..	24	..	..	..	24
Elementary Science....	..	2	1	..	..	..	3
Geology .....	..	8	2	..	..	..	10
Physical Geography....	..	27	3	..	..	..	30

TABLE 44—Continued.

	Length of Course in Years						Total
	Under .5	.5-1	1-1.5	1.5-2.	2-2.5	2.5 and over	
Physics .....	..	..	44	..	..	..	44
Physiology	1	2	..	..	..	..	3
Zoology	1	13	1	..	..	..	15
Commercial:							
Arithmetic	2	11	5	..	..	..	18
Bookkeeping .....	..	13	9	..	..	..	22
Commercial Law .....	..	3	2	..	1	..	6
Commercial Geography .....	..	5	1	..	..	..	6
Penmanship .....	..	..	1	..	..	..	1
Stenography .....	..	..	2	..	1	..	3
Typewriting .....	..	1	2	..	1	..	4
Accredited Schools:							
History:							
Ancient .....	..	1	56	..	..	..	57
Medieval and Modern .....	..	..	51	..	..	..	51
General .....	..	..	5	..	..	..	5
English .....	..	10	15	..	..	..	25
American .....	..	52	3	..	..	..	55
Civics .....	..	48	4	..	..	..	52
Economics .....	..	4	1	..	..	..	5
Industrial .....	..	3	1	..	..	..	4
Mathematics:							
Algebra .....	..	..	3	56	4	..	63
Plane Geometry .....	..	..	63	..	..	..	63
Solid Geometry .....	..	56	..	..	..	..	56
Trigonometry .....	..	16	..	..	..	..	16
Arithmetic .....	..	3	2	..	..	..	5
Science:							
Agriculture .....	..	3	6	..	1	3	13
Astronomy .....	..	3	..	..	..	..	3
Botany .....	..	34	7	..	..	..	41
Chemistry .....	..	..	59	..	..	..	59
Elementary Science .....	..	5	7	..	..	..	12
Geology .....	..	11	2	..	..	..	13
Physical Geography .....	..	27	10	..	..	..	37
Physics .....	..	..	60	..	..	..	60
Physiology .....	..	10	1	..	..	..	11
Zoology* .....	..	34	..	..	..	..	34
Commercial:							
Arithmetic .....	..	19	14	..	..	..	33
Bookkeeping .....	..	5	22	..	5	..	32
Business English .....	..	3	2	..	..	..	5

* Botany has been reported as Botany and Zoology.

TABLE 44—Concluded.

	Length of Course in Years						Total
	Under .5	.5-1	1-1.5	1.5-2.	2-2.5	2.5 and over	
Com'l Correspondence..	2	..	..	..	2
Com'l Geography.....	..	15	2	..	..	..	17
Com'l Law	13	1	..	..	..	14
Penmanship	2	2	..	..	..	4
Stenography	8	1	7	..	16
Typewriting	1	15	..	12	..	28

On the amount of time to be devoted to a division of a department there is a large measure of agreement. The figures fall principally into two columns for all of the headings. The disposition of non-accredited schools to jump more rapidly from one field to another appears from the fact that no accredited school gives any subject for less than a half-year, so far as this analysis discloses. Greek, Commercial Correspondence, and Business English are the only subjects found in none but accredited schools. Detailed comparisons of many kinds can be carried through at will. For example, General and English History and Economics are much more popular in non-accredited schools, American History less so, and Civics much less so than in accredited ones.

Analyses of other departments can possibly be made in the course of time if data is made available, but this can not come in some directions except through more definite organization. English is as complex as History, but it is so co-ordinated (or mixed) at present that it defies analysis. The same is true of modern-language work. Where over a unit is offered Agriculture can easily be split up at present.

B. ARRANGEMENT OF COURSES.

The place of many subjects in the curriculum is closely fixed. In the two schools where Greek occurs, it comes as late in the course as its length permits. In three two-year and two four-year non-accredited schools, the single year of Latin is placed in the tenth year. One of the accredited schools puts this subject in the last two years. Otherwise it is always open to freshmen. German is open to freshmen in accredited schools, no matter how little of it is given, but all other classes of schools show varying arrangements. Some begin a single year of the language in the tenth, others in the twelfth grade. But most schools offering two years place that in the junior and senior schedule. French is taken by no freshmen, but the two years of Spanish is as often ninth and tenth as it is eleventh and twelfth. When English does not run throughout the course, it is almost always omitted in the last year.

General History is nearly all confined to the ninth and tenth years, and the customary year of it is sixty per cent oftener in the freshman schedule than elsewhere. Ancient History runs strongly to the ninth year, but strikes the tenth in ten accredited schools and some others. "Medieval and Modern" follows "Ancient", lapping into the eleventh year more often than "Ancient" did into the tenth. In twenty-two accredited schools it is a

junior study. English History usually comes next, and is regularly eleventh year, but straggles considerably over the whole course. American History is normally twelfth-year, but it also straggles except in accredited schools. There it is offered twice to juniors and fifty-three times to seniors. Civics runs as a correlate with or sequel to the American History, so it falls nearly every time to seniors in their last semester. Economics has been put at the end of the course because of its supposed difficulty, and Industrial History shows the same tendency.

Algebra is habitually taken up on entering high school. Most abandon it at the end of a year for Plane Geometry. This gives place in the junior year to Advanced Algebra and Solid Geometry for a half-year each, with the Algebra, as a rule, preceding. A dozen schools, only one of them accredited, try to complete the Algebra first and find it sometimes taking two years. Then Plane Geometry goes into the eleventh year and "Solid" is forced into the twelfth. Trigonometry is by all means a senior subject. The few Arithmetic offerings are mainly for upper classmen. A prominent principal maintains that Algebra is too hard for freshmen and is setting the traditional course back a whole year in his school.

Agriculture for a year or less may be called a freshman or sophomore subject. Astronomy finds its station further up. Botany is everywhere, but falls into the tenth grade over half the time. Zoology is either ninth or tenth. Biology is hardly a freshman study, but is being tried everywhere else. Whether taught in the same school or not, Physiography seems to be generally considered as more elementary than Geology. Elementary Science usually comes where the elements by inference would come, but two non-accredited schools have made it a junior branch. Physiology is everywhere except in the senior year. Physics and Chemistry are divided between the last two years. About seventy per cent of the schools give Physics first and Chemistry second. The others reverse the order. Seventy and thirty, however, over-represent the difference as the students actually take them, for most non-accredited schools alternate them year by year to avoid loss of teaching energy.

Every division of commercial study is by some school or other placed in the ninth year. This is the consequence of popular clamor for something practical. Many schools hold all commercial work, except Business English, out of the ninth year on the assumption that the child is not then ready to specialize either intelligently or successfully. Bookkeeping, Commercial Geography and Commercial Arithmetic, with Commercial Correspondence and Business English, are the first to be taken up in general. Commercial Law, Stenography, and Typewriting are the ones most likely to be deferred.

Other special subjects, such as Manual Training, Mechanical and Free-hand Drawing, Domestic Arts, are scattered through the curriculum as far as they will reach from the bottom up. Teacher-training classes, on the other hand, are senior, rarely junior.

Recitations are five times per week in all languages except Latin and English. An almost negligible number of schools drop to four and three

in these two languages. Half of the exception is produced by North-Central-Association schools, which with forty-five minute periods are able to present the minimum number of hours in recitation, and still meet only four times, one semester. In the different divisions of History the same thing is true of accredited schools, none of which ever drop below four times per week. Non-accredited schools show a slight scattering down to two times per week. The same thing occurs in Mathematics as in History. Variations from the type in non-accredited schools all through are mostly accounted for by two overcrowded principals, who are running many subjects on the plan of two or three times per week to keep recitations of reasonable length.

The Science falls below five periods per week in even fewer cases. Scattering accredited schools have placed this or that science on a laboratory basis running from five up to ten periods per week. Physics and Chemistry are the only divisions that often allow extra periods for laboratory work, but about forty per cent of the accredited and non-accredited schools hold these also to five periods per week. Teachers who have less than seven periods (which normally include two double laboratory periods) express a great deal of dissatisfaction over the haste and superficiality necessary to cover the customary ground. One very large school has placed all its Science on the basis of a double period daily, which allows for both laboratory work and supervised study. The results have been gratifying.

In commercial departments a few non-accredited schools have classes meeting two or three times per week, because they are alternating with one another. Accredited schools operate the work here, except Typewriting and Bookkeeping, on the same principle as they do the other departments. These two in a large minority of the schools call for ten periods per week in the commercial rooms, but do not then require much outside work. When Typewriting comes only five periods per week, it often carries only half the credit of a standard subject.

Drawing, Manual Training, and Domestic Arts meet two or four periods, getting in double periods where possible, and interfering materially with the rest of the program. Some students miss one recitation out of five in other departments to get these special subjects. Several schools have Drawing and Domestic Arts one single period per week, but the greater number are making these half-credit studies by providing one period daily. About a half-dozen schools have arranged for ten periods per week and give a full credit.

C. REQUIREMENTS FOR GRADUATION.

The number of units required for graduation varies as follows:

Schools.	Under 15.	15-16.	16-17.	17 or over.
Non-Accredited	1	14	35	..
Accredited .....	..	17	45	1

There is slightly less difference from the standpoint of the student than this range suggests. Schools requiring a greater number of units may give credit, and often do, for small amounts of Physical Culture, Music, Spelling, or Penmanship, which take but little time, sometimes serve as

recreations, or are compulsory in some other schools without credit. Fifteen to sixteen units is about the actual range as the student feels it. Schools with the lower requirement graduate students sometimes in three years, and in a few of them the average student expects to complete his course in three years. One school has tried to recognize quality as well as quantity of work in graduating students. It has established a requirement of 1350 units, which is to be secured by adding the grades secured in all subjects. If a student should average 90 in fifteen units he would secure the necessary total, but falling below 90, he must take over fifteen units.

The disparity in requirements and offerings leaves room for election. Two general plans obtain in this State. First, there is unlimited election after the completion of certain prescribed subjects. This is the plan in non-accredited schools so far as they are able to permit election. Second, there is election by groups of subjects. This is the arrangement in a fifth of the accredited schools. The groups may be rigid, but they are not often so after the first year or two of the course. From two-thirds to three-fourths of the course is prescribed, and the range of choice outside of that is narrowed somewhat. Absolute rigidity in a course has been found to drive students away from it. Where all courses are equally rigid, this is not possible. The college preparatory course, called by whatever name, is usually the least flexible. The difference in theory between the two principal forms of election seems to be over the propriety of requiring or permitting a limited specialization in high school. Group election is generally designed to compel the pupil to frame a definite aim and specialize thereto, but it may be so adjusted as to do exactly the opposite. Where groups are wholly prescribed, the difference in theory rests upon the point as to whether the students of a school fall into some two to five classes with respect to needs, or whether there are as many different needs as there are students enrolled.

Where election is unlimited after the completion of certain prescribed subjects, the number of units prescribed is as follows:

Schools.	Under 5.	5-9.	9-10.	10-11.	11-12.	12-13.	13-14.	14 or over.
Non-Accredited	2	1	3	5	4	5	3	
Accredited	2	3	6	6	5	7	6	..

Apparently, Colorado represents all theories in reference to educational values, from the traditionalist who is sure of the worth of his subject, no matter who takes it, to the radical who will permit a student to earn a diploma by piling together any combination of the necessary magnitude. With regard to the latter, however, it is well to note that the breadth of election is not always so great as it seems, because the offerings are limited. The student's choice then is not so much any six to twelve units he desires, as rather what two or three he does not desire.

The prescribed subjects may next be studied. No tally was made of the schools *not* requiring any subject, but it may be approximated from the fact that some English is an almost universal requirement. For example, about seven of thirty-seven accredited schools require no foreign language (see Table 45).

TABLE 45.
NUMBER OF SCHOOLS BY UNITS PRESCRIBED FOR GRADUATION.

Non-Accredited Schools:	Units.								Total
	½	1	1½	2	2½	3	3½	4	
English .....	..	..	..	..	..	10	..	13	23
Foreign language.....	..	1	..	12	..	2	..	5	20
Latin .....	..	1	..	5	..	..	..	..	6
German .....	..	..	..	3	..	..	..	..	3
History .....	..	5	1	11	1	1	..	..	19
Ancient .....	..	13	..	..	..	..	..	..	13
Medieval and Modern...	..	6	..	..	..	..	..	..	6
General .....	..	5	..	..	..	..	..	..	5
English	1	..	..	..	..	..	..	..	1
American	5	1	..	..	..	..	..	..	6
Civics	6	..	..	..	..	..	..	..	6
Mathematics .....	..	..	..	14	4	5	..	..	23
Algebra .....	..	14	7	1	..	..	..	..	22
Plane Geometry	2	20	..	..	..	..	..	..	22
Solid Geometry.....	4	..	..	..	..	..	..	..	4
Science	1	5	..	11	2	1	..	1	21
Biology	2	..	..	..	..	..	..	..	2
Botany	4	3	..	..	..	..	..	..	7
Chemistry	1	4	..	..	..	..	..	..	5
Geology	1	..	..	..	..	..	..	..	1
Physical Geography....	4	..	..	..	..	..	..	..	4
Physics .....	..	13	..	..	..	..	..	..	13
Zoology	3	..	..	..	..	..	..	..	3
Accredited Schools:									
English .....	..	..	..	..	1	21	2	13	37
Foreign language .....	..	..	..	14	..	2	..	6	22
Latin .....	..	..	..	5	..	..	..	..	5
German .....	..	..	..	3	..	..	..	..	3
History .....	..	5	1	20	1	4	1	..	31
Ancient .....	..	23	..	..	..	..	..	..	23
Medieval and Modern...	..	13	..	..	..	..	..	..	13
English	2	1	..	..	..	..	..	..	3
American ..	8	4	..	..	..	..	..	..	12
Civics	9	1	..	..	..	..	..	..	10
Mathematics .....	..	2	1	22	8	2	..	..	35
Algebra .....	..	25	9	..	..	..	..	..	34
Plane Geometry	1	30	1	..	..	..	..	..	32
Solid Geometry	3	1	..	..	..	..	..	..	4
Arithmetic (Commercial)	1	..	..	..	..	..	..	..	1

TABLE 45—Concluded.

Non-Accredited Schools:	Units.								Total
	½	1	1½	2	2½	3	3½	4	
Science .....	..	9	2	17	..	5	..	..	33
Biology .....	..	5	..	..	..	..	..	..	5
Botany	1	1	..	..	..	..	..	..	2
Chemistry .....	..	15	..	..	..	..	..	..	15
Elementary Science ....	..	1	..	..	..	..	..	..	1
Physical Geography	2	..	..	..	..	..	..	..	2
Physics .....	..	23	..	..	..	..	..	..	23
Physics or Chemistry...	..	1	..	..	..	..	..	..	1
Music	1	..	..	..	..	..	..	..	1
Domestic Arts	1	3	..	..	..	..	..	..	4
Manual Training	1	3	..	..	..	..	..	..	4
Psychology	1	..	..	..	..	..	..	..	1

Single units of foreign language are generally discouraged or forbidden. The usual wording is, "Two units of one foreign language", or "Four units of two foreign languages". One school requires for graduation an interesting composite unit, which consists of ten credits. Music for four years makes up two credits; gymnasium work for four years, four credits; art for four years, one credit; attendance of 95%, punctuality of 95% and deportment of 85% for four years, the three remaining credits.

The generally prescribed units in the schools working on the group system would not change the above very much.

D. TEXTBOOKS.

Many different textbooks have secured holdings in the State. In some departments the diversity is confusing, in others there is almost uniformity. These two points are covered in Table 46.

Texts of very different age sometimes are found to occupy substantially the same position, so far as holdings are concerned. A very new text may have numerous adoptions, but these are not based upon experience; they represent the advance judgment of people who have examined the work with more or less care. A young text which is gaining ground is evidently much more entitled to consideration than one which has been on the market for years and has many more adoptions but is at present losing ground. Were it deemed proper to publish the holdings of texts by name, many illustrations of this could be found.

TABLE 46.

	Different Texts Used. Accred- ited Schools.	All Schools.	Per Cent of Total Adoptions Held by First Book Accred- ited.	Book All.	Second Book Accred- ited.	Book All.
Latin:						
Beginning	9	16	42	52	22	22
Caesar	7	13	32	32	28	25
Cicero	7	8	28	35	20	24
Virgil	8	10	40	43	11	15
German:						
Beginning	9	17	47	39	17	17
English:						
Rhetoric & Composition.	21	26	24	29	22	15
English Literature	7	12	52	47	21	20
American Literature ..	13	16	16	17	14	15
History:						
Ancient	5	5	72	83	22	13
Medieval and Modern...	4	5	68	72	19	13
English	7	10	56	42	20	30
American	12	13	24	18	22	14
Civics	12	16	54	41	11	13
Economics	5	7	40	38	30	25
Mathematics:						
Algebra	10	15	34	25	19	21
Plane Geometry	11	14	53	44	25	38
Solid Geometry	9	10	48	45	27	27
Trigonometry	3	3	80	82	10	10
Science:						
Agriculture	12	18	30	43	13	11
Biology	8	13	63	47	25	23
Botany	6	9	45	51	30	17
Chemistry	6	9	42	33	25	26
Elementary Science ...	4	4	57	85	14	5
Geology	5	7	46	28	18	19
Physical Geography...	7	13	28	28	22	18
Physics	8	12	60	59	22	20
Physiology	8	8	20	17	10	12
Zoology	8	9	28	19	17	16
Commercial:						
Arithmetic	5	7	40	39	36	34
Bookkeeping	7	11	31	23	26	20
Commercial Law	5	8	42	33	33	18
Commercial Geography.	7	7	29	29	24	21

VI. SUPERVISION.

A. THE SUPERVISORS.

The supervising body itself is difficult to define, but for purposes of simplicity it will be regarded as consisting of the chief school officer of each school. To this superintendent or principal will be added the individual recognized in reports from each school as "Principal of the High School", if such second person is reported. The practice is far from uniform in this regard. High schools of only forty or fifty students are sometimes placed especially under the direction of one more highly-paid teacher, who is recognized as "Principal" by the head of all the schools of the district, and is given certain important administrative duties to perform. Other schools of much greater size are sometimes without any principal other than the superintendent or principal of the district. Duties that might be assigned to a principal of the high school then are divided among the teachers.

Since the work and reward of the supervisor are quite distinct from those of his subordinates, it will be pertinent to examine the personnel of the body of supervisors and to see wherein it varies in character from the body of teachers supervised.

Whatever be the danger of feminization of the schools, it is not imminent in the supervising force. Though a few small high schools have been feminized absolutely, as previously noted, there is little supervision by women in the larger schools. No union school of over one teacher has a woman in chief control, no county school has a woman as principal, and only two non-accredited high schools of over one teacher and one North-Central-Association school have a woman as superintendent. As second in command there are ten women, six in North-Central-Association and four in other accredited schools. This limited number must serve as a basis for comparisons.

The median tenure of men supervisors is 4.3, 2.2, and 1.6 years, respectively, in North-Central-Association schools (except Denver), other accredited, and non-accredited four-year schools. Their average tenure for all sorts of districts is from twenty to sixty per cent greater than their median tenure. Compared with the tenure of men teachers in general (see Table 36), the tenure of supervisors is from fifteen to sixty per cent better. Tenure for women supervisors is shorter than for men supervisors, but considerably longer than for women teachers. These facts offset somewhat the disintegrating effect produced in schools by the rapid change of teachers of the rank and file.

Supervisors are of riper experience than those under their supervision. The median experience of superintendents and principals of high schools is 14.9, 12, and 9.3 years for North-Central-Association, other accredited, and non-accredited schools, respectively. This is far above the medians of Table 30. Only two superintendents of accredited schools have less expe-

rience than the average of their faculties, but the same can not be said of the high-school principal in four or five cases. On the other hand, the superintendent of ten non-accredited schools has less experience than the average of his faculty.

The supervisors are so much older as a body that it is not easy to make a definite statement of their preparation without possibility of considerable error. Considered in relation to their own faculties, supervisors in non-accredited schools are superior to their teachers twice as often as they are inferior. For accredited schools their advantage decreases a little. But when their preparation is compared with that of all teachers, as shown in the first two columns of Table 26, the supervisors are about typical of the whole teaching force.

An important problem connected with the supervisor is the amount of instructional work he should perform. This would presumably depend upon such elements as the number of teachers to be supervised, the size of the school as determining administrative duties, the provision of clerical assistance, the engagement of a clerk of the board aside from the superintendent, the recognition, in addition to the superintendent, of a high-school principal who discharges administrative and perhaps supervisory duties. This produces a situation too complex to be illuminated particularly by general comparisons with the practice of other schools. Nevertheless, certain schools contract the habit of asking or not asking the principal to do certain things. There is probably no sufficient reason why the principal of one high school enrolling between three and four hundred should teach one class per day, while the principal of another school of equal size teaches four classes. The inequality is still further increased by a clerk for the first principal and none for the second. It is suggested that careful comparisons be made by principals between other schools and their own in order to determine whether they are overworked.

Salaries of supervisors are a less complex problem. In this connection, too, there are great disparities between schools that are fairly in the same class. In spite of the fact that men receive on the whole much more liberal salaries, a woman principal with five teachers, one in the high school, which enrolls twenty-five and is not accredited, receives \$1400, and a man with seven teachers, two in the high school, which enrolls fifty and is accredited, receives \$1000. Differences in responsibility, living expenses, or the qualifications of the two persons do not warrant this difference in salary. One school is rather isolated and does not have better examples brought to its attention; the other is in a cosmopolitan neighborhood with good schools and high salaries all around. As with reference to instructional duties, comparisons should be made to bring a school somewhat into line with current practice, not merely as to total salary of supervisor, but as to the ratio of his salary to that of his assistants. Two principals, with the same number of high-school assistants receiving the same salary, are paid \$1000 and \$1600, respectively.

B. RECORDS AND REPORTS.

The supervisor is primarily responsible for the bookkeeping of the school. The financial side is always a liability; resources in the shape of student advancement must be recorded. The records consist of class and attendance registers, permanent records of students, and reports to the parent. The attendance register may be dismissed without further comment than has already been made relative to the desirability of uniform methods of computing attendance.

A number of permanent records were collected, some giving very few items, others many. Half or more of the schools still use a large ledger with a page or half-page for each student. The loose-leaf system is being adopted as much easier to manipulate. Cards of light board may be used in a tray, ordinary good paper in a binder. Use of both sides is possible in the binder and reduces the bulk. A composite of the samples gathered suggests the following data as sufficient.

Pupil—Full name, date of birth, dates of entrance and graduation, school from which he entered.

Parents—Name, nationality (or race), and occupation of each.

Intellectual—Subject, weeks pursued, periods per week, year and semester when taken, semester grade, credits, name of teacher. The general line of subjects should be printed on the record. Semester grades and credits are enough to check up the pupil's progress. Detail of the same by months, class-work and examination, can be secured from the class register of the teacher, which should always be preserved. Teachers will keep more satisfactory records when they realize that others will consult those records. Laboratory hours per week may be distinguished from others by enclosing them in parentheses. Only completed subjects should be entered in the regular spaces, but a space below or on the reverse of the sheet for notation of failures and incompletes is an important feature. Credits transferred from other schools should be entered in red. Other schemes for abbreviation without indefiniteness can be devised and printed at the bottom of the sheet. Classics read are sometimes placed on the back of each student's record. This entails a vast amount of work. The classics read in each English class year by year can be listed in a book with the names of the students passing the course. If the English course is definitely outlined and adhered to, it will be evident what classics each student has read.

Moral—Half days present, half days absent, times tardy for each year. A brief space after each branch for concrete remarks by the teacher on deportment, application and other moral traits is superior to a grade in per cents.

Physical—A very few schools give a physical examination on admission. One permanent record gives date of vaccination and name of physician performing it. These are the only evidences of the approach of the day when the physical progress of the student will be an object of careful record by the school. Tests of strength, lung capacity, or vital ca-

capacity (the ratio of weight in pounds to lung capacity in cubic inches) might be recorded. They should show increase from year to year.

Vocational—A space to record the special capacities and interests of the student year by year would be helpful. Taken partially from his own testimony and with his knowledge, it would at least put a motive into his work.

The report card or folder is issued monthly in the majority of schools. Quarterly reports and reports six times a year are the other two methods, and are used about equally. Signature of parent is requested. One school sends monthly reports by mail, which are not returned. Another, which reports on all students quarterly, issues a report at the middle of each quarter in cases of unsatisfactory work, gives the teacher's opinion as to the cause, and asks the parent for suggestions. The common form of report card gives the grades in each subject, days present and absent, times tardy. Deportment by itself is often noted, but besides it are found such entries as "application", "earnestness", "progress", "effort", "industry", "manners". One school gives a grade on "effort in music and drawing". Not more than two moral traits are mentioned on any card except in four schools. These have printed a card with numerous specific comments on the attitude of the student toward his school work in general, his conduct, and the difficulties that appear in his recitations. A check can be placed after the comment the teacher desires to make, or the teachers can be numbered on the cards and teachers can use their numbers instead of checks. Letters to parents are regularly sent out in a very few places when students show deficiency, and they are reported to have a very good effect. The rank of the pupil is not often reported, though studies of grading indicate that it is probably more reliable than the grade. Occasionally, one finds special cards sent at the close of the year, listing all credits gained to date. One school places this information on the monthly report card.

The per cent system of grading leads the literal ones. The latter nearly always give the meaning of the grades in numbers, which is very helpful in the transfer of students or in filling blanks for college entrance. The permanent record, however, is best kept in numbers. Literal systems are alike in having three or four letters to indicate passing grades. Usually it is three, each letter standing for ten points on the per cent scale. The custom is to use letters in their alphabetic order, beginning with A for the highest grade of efficiency, though some like systems in which the letter has a connection with the grade of work, as "E=excellent", etc. Seventy is a passing grade much oftener than seventy-five. Averages of seventy or eighty with a minimum of sixty-five or seventy are a not uncommon requirement for graduation.

C. DISCIPLINE.

In these days of "soft pedagogy", some high schools annually go to pieces and almost nullify themselves. Or the efforts made to prevent

such a catastrophe alienate the superintendent from his board and patrons and result in failure to re-elect him or some of his assistants.

This question was asked in schools surveyed: What methods do you find most effective in the discipline of your students? The responses varied, but "Talking to them", "Personal talks", "Heart-to-heart talks", "Moral suasion", and "Oral reprimand", show the direction that is taken with high-school students. The prevalence of these rational, human methods is perhaps the reason why many principals of small schools had nothing to report. The close personal contact here solved the question before it came up. One principal said he gave "get-together" talks when he saw clouds rising.

Where other pressure is needed, suspension and detention after school are favorite methods. Keeping boys out of athletics, denial of playground or gymnasium privileges are effective. When a student is suspended he is sometimes sent home with a note telling of his offense, and asking for a statement from the parent. Letters are sent to parents from two schools. The student is re-admitted when he comes to a decision as to his future course and enters into an agreement. He may be required to propose his own penalty. Three schools reported expulsions; four lowered grades in deportment or other studies, endangering happy immunity from the examinations; two gave additional school work. Corporal punishment is rarely inflicted. Personal treatment and cooperation of home with school are pronounced the best of all.

D. THE DAILY PROGRAM.

The hour of opening for four-year schools is as follows:

Hour.	8:00	8:30-8:44	8:45-8:59	9:00	9:01-9:15
Schools	3	3	6	68	4

The time of closing for the day is as follows:

Hour.	12:45-12:55	2:20-2:45	3:-3:14	3:15-3:29	3:30	3:31-3:45	3:45
Schools:							

Non-Accredited..	1	..	1	4	10	7	16
Accredited.....	1	7	6	12	15	3	..

The length of noon intermissions is as follows:

Minutes.	None.	20	30-45	60	65-70	75	80-95
Schools:							
Non-Accredited.....	1	2	1	20	1	9	7
Accredited.....	2	1	5	7	2	20	9

The length of other intermissions can hardly be tabulated. Few accredited schools have any except as their size requires a little definite allowance for students to get from class to class. A breathing space of three or five minutes is sometimes allowed at the middle of the forenoon and again at the middle of the afternoon. Non-accredited schools generally have a fifteen-minute recess twice a day, though some imitate the accredited schools. Differences between the two classes with respect to intermissions and time of closing are principally due to the operation of non-accredited schools in

the same building with the grades, whereas most accredited schools are in separate buildings.

Periods in accredited schools are quite conventionalized. Rarely is a period under forty or over forty-five minutes. The upper figure is slightly the more common. In non-accredited schools recitations continue from ten to sixty minutes, but over half of the schools manage to keep their periods from forty to forty-five minutes. The consequence is that while accredited schools have from six to eight periods per day (seven in over five-sixths of the schools), non-accredited schools have as many as twelve periods per day. Half of them are able to keep below eight periods.

VII. THE SCHOOL IN CONTACT WITH THE COMMUNITY.

"The School for the Community" is the cry of the time in education. The cooperation of the forces of the two tells how near the slogan is to realization. The signs of this contact in Colorado high schools may be summarized under three heads.

A. OUTSIDE AGENCIES WORKING WITH THE SCHOOL.

Parent-teacher associations embrace most of the outside organizations that get close to or into the school life and modify the school for greater community service. Sometimes they are called mothers' congresses, mothers' clubs, or community clubs. Probably a dozen to fifteen high schools are being touched in this way. If held regularly, meetings are monthly for the most part. The schedule is varied from meeting to meeting; there are discussions of educational topics, especially those of local interest, programs in which enough children take part to secure the attendance of many patrons, addresses by physicians on the health of children. The only difficulty found is that the association sometimes runs out of work, and then busies itself with professional problems that the teachers should be working out together. One superintendent declared that he wanted nothing of the sort.

The work of these outside bodies is at times excellent. A woman's club gave one school a victrola; two organizations of women in different towns put \$40 and \$35, respectively, into playground apparatus for their schools; a civic club secured better sanitation of buildings and is now working to reduce the cost of dress at commencement.

Students are encouraged to proficiency by prizes. A parent-teacher association gives \$15 each year to the boy who wins a contest in reading (declamation), and a woman's club in the same district does the same for the girl. Private parties become interested. A local pastor talked to a school on current events and gave books as prizes to three students who passed the best examination on the ground he covered. Members of one board give three prizes of \$5 to the winners of contests in essay, oratory, and declamation. Business men give \$5 for the best essays on local topics, a fine stimulus to students to study their own home and find out what it contains. A local fair association gives prizes for drawings and a superintendent gives prizes for manual training designs. One citizen gives \$10 annually for the best oration, and an equal amount for the best essay. A banker gives \$10 for the best debater. A patron presented a gas engine to a school on condition that the boys be shown how to run it. Students in one school were given credit in bookkeeping for a set of books showing the disposal of the family budget for a specified time. A domestic science class did its cooking at home. The Holly plan in Domestic Science is another illustration of cooperation. Women of a town which could not hire a teacher of Domestic Arts made up

a schedule that allowed for each of nine women to give some instruction for a month, thus filling out the year. Two citizens in one town, professional men, went to the high school to teach one class daily. Close correlation of activities of the public library and the school has been made.

B. THE SCHOOL SERVING THE COMMUNITY.

An important means of service to the community lies in the opening of the school building and its facilities to the use of citizens in any collective activity. The familiar "social center" idea comes in here. In the small towns and rural places it often happens that the school building can accommodate a larger crowd than any other available meeting place. Perhaps there is no church or hall in the community. The school then is the place to hold lectures, political gatherings, meetings of the grange, and social affairs. Parent-teacher associations usually are held at the school. One rural high school arranged a lecture course on rural subjects. A few schools with strong agricultural constituencies test milk and seed for the farmers. A civics class caught a social inspiration and collected two wagon loads of clothing and food for the poor.

Teachers in our high schools last year ran private classes in Latin, German, Geometry, Trigonometry, Mechanical Drawing, Stenography, Typewriting, and Music. A woman principal organized a group of women patrons to carry on a reading course on the Scandinavian countries. They met twice a month for discussion. A superintendent supervised an athletic club for the boys of the town. Many teachers took an active part in the religious life of their districts. On the other hand, scores of high-school teachers desert the little towns from Friday evening until Sunday night or Monday morning for centers of larger interest.

At two Denver high schools night schools are run. In one county high school evening classes in drafting are held for local mechanics. One school holds an annual farmers' week, gives a five-month commercial course and a three-month teachers' review in the winter. Two county high schools hold agricultural short courses of six and twelve weeks, respectively, in the later winter season.

C. VOCATIONAL GUIDANCE.

With the vast amount of attention given to vocational subjects scarcely any thought has been devoted to vocational guidance. The assistance given by several schools to students who come from out of town and need employment to help pay their expenses looks in this direction a little, but the employments secured are regarded as makeshifts by the pupils rather than as possible vocations. Two or three schools are trying to place students in vacations. In these cases the worker probably looks at his work as a vocation.

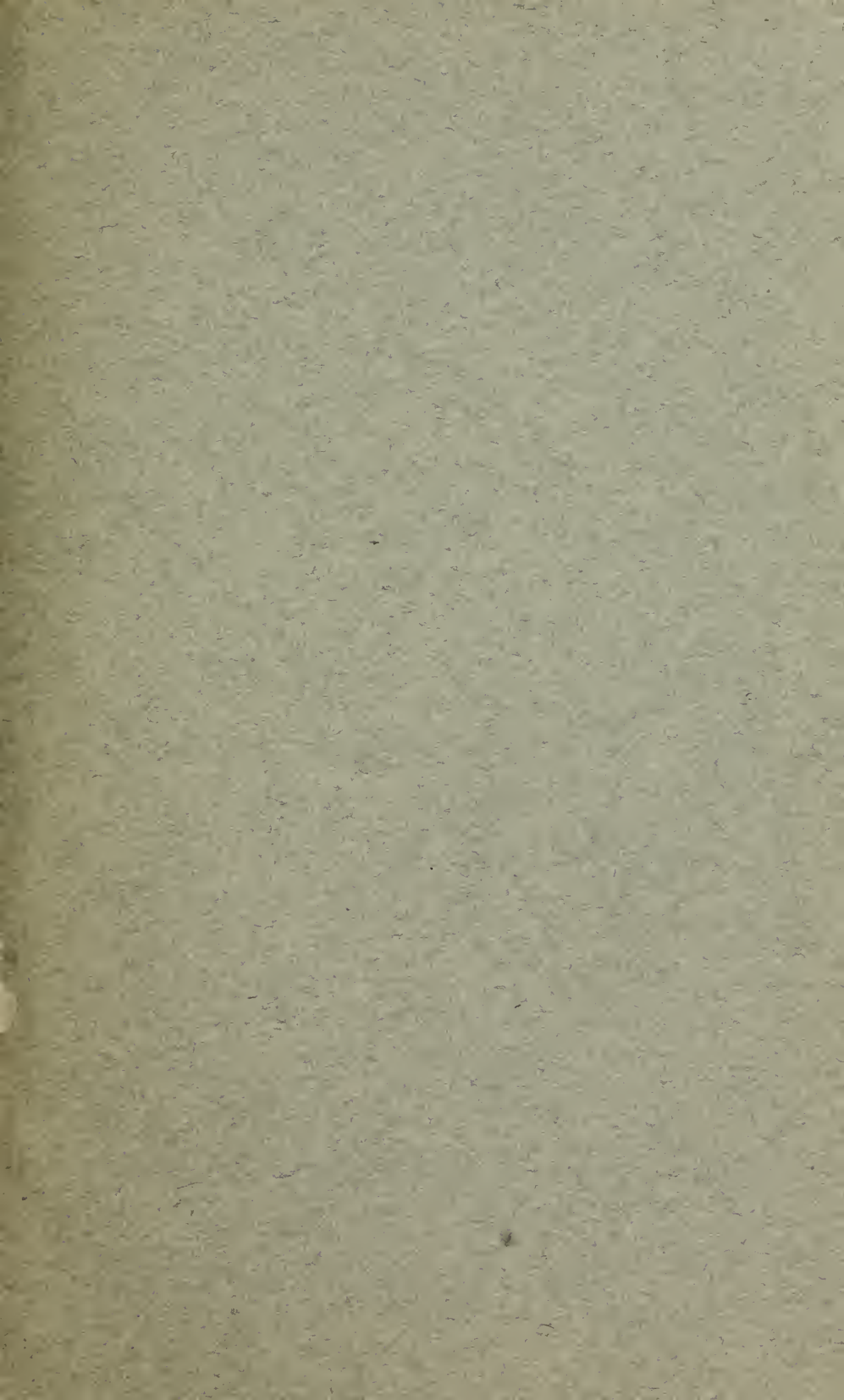
One high school has tried the Oregon plan of giving credit for work of many different kinds performed out of school. This is a distinct challenge

to the student to try himself out. In the process it is likely that he will learn something about himself. Credit is given hour for hour as though the time had been spent in the laboratory. A large city school holds consultation with business men and recommends students for employment. In two places the faculty discuss choice of an occupation and kindred topics as well as they can. Professional and business men come into two schools and speak of their particular vocations, and at one school the seniors are given some special instruction. Other advice is given only as the student voluntarily goes to some one in the school and asks for it.

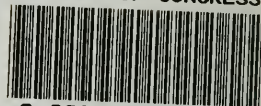








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