ments now in progress in other vocational schools. We have fallen into the error, it is to be feared, of regarding the student mind as a storage tank for useful facts rather than as an instrument to be fashioned into soundness and efficiency. We must never forget that the farmer is comprehended in the man. And when we realize that many of the graduates of these institutions will exert a dominating influence upon the mental and moral development of young men and women, we see a most important reason why their education should not be confined to the narrow line of technical training. And above all, as has been urged, these graduates are to be members of society.

After all, what are the supreme objects of education? It has been reported, though I do not credit the statement, that a member of an agricultural college faculty once declared that the business of his institution was to bring about the production of more hogs at greater profit. If this remark was made, what a spectacle it pictures! It places the hog at the pinnacle of educational aspiration with man as a lesser figure. In sharp contrast to this gross conception of educational ideals stand the sentiments of great minds who have seen broadly and clearly the larger issues of life.

Hill says of education that it should "quicken a man's mental perceptions, form in him the habit of prompt and accurate judgment; lead to delicacy and depth in every right feeling and make him inflexible in his conscientious and steadfast devotion to all his duties." Milton wrote that "the main skill and groundwork of education will be to temper the pupils with such lectures and explanations as will draw them into willing obedience, influenced with the study of learning and the admiration of virtue, stirred up with high hopes of living to be brave men and worthy patriots."

Listen to Mill:

> The moral or religious influence which a university can exercise consists less in any express teaching than in the pervading tone of the place. Whatever it teaches it should teach as penetrated by a sense of duty; it should present all knowledge as chiefly a means of worthiness in life, given for the double purpose of making each of us practically useful to our fellow creatures and of elevating the character of the species itself.

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A STUDY OF RETARDATION IN THE SCHOOLS OF MINNESOTA[1]

The Materials.—The statistics brought together in this paper were gathered, for the most part, in two separate investigations. One, relating principally to retardation, in all its aspects, was conducted under the auspices of the Minnesota Psychological Conference. The other, concerning itself mainly with the first year of retardation, or with repeaters, was made at the request of the Associated School Boards of Minnesota.

Part of the data collected was laid before these bodies at their respective 1910 meetings. Both reports have been combined, condensed, rewritten, and several sets of other interesting statistics introduced for comparative purposes.

The Schools Studied.—The schools contributing the data on retardation proper are fifty-five of the smaller systems of the state. They each maintain high schools, known in Minnesota as "state high schools," owing to the fact that they are carefully inspected and listed with the State High School Board for a large yearly special grant direct from the state treasury. They are, therefore, schools which are kept at a high state of efficiency.

Only Grade Pupils Considered.—Only the pupils in the grades below the high school are considered, for several reasons. First, the high school students are invariably promoted by subjects, hence accurate statistics as to

[1] Presented before Section L, American Association for the Advancement of Science, at the Minneapolis meeting.

retardation among them, in the usual sense of the term, can not be had. Then, again, with the eighth grade once passed, and often earlier, the most retarded pupils, being safely beyond the compelling influence of the truancy law, or of social opinion, quickly drop out of school and the problem of retardation becomes so confused with the problem of elimination as to make the figures of doubtful value.

A State-wide Study.—The schools studied were well distributed over the state so as to embrace every variety of size, location and environing conditions, and to make the study fairly representative of the entire state, and the results are believed to be an index to the prevailing conditions throughout the state.

The Ayres Standard for Retardation.—In the Ayres investigations, published by the Russell Sage Foundation, children in the first grade are considered normal if they are under eight years of age. In the second grade ages under nine are normal, and so on through the grades. The reasons for thus allowing an extra year are not given. The text asserts that these are the ages allotted to the grades "by common consent." But certainly it is not in accord with the actual practise in administering schools in Minnesota, and I doubt if it is anywhere. Its effect is to conceal one year's retardation for every child during his progress through the grades, provided he entered at six years of age, and last year only 441 children in the schools under consideration entered later than six, while very many entered earlier, as they are usually admitted if they are six by the middle of the year.

A child entering the first grade at six should be in the second grade at seven, the third at eight, and so on. Now suppose he fails to "make grade" while in the second grade and remains there two years, repeating and retarded, yet his age, when he enters the third grade would be only nine. By the Ayres method that would be considered normal, and yet he is retarded. By that method it is possible, then, for every child in a school system to be retarded one year after entrance, and yet the system to appear absolutely free from retarded pupils.

The Minnesota Standard for Retardation.—In every school system covered by this investigation the children are admitted at six years of age or younger. We have reckoned the entering age at six. Further, in every one of these schools promotions are made only once a year, in June. Each grade by its very conception means a year's work. Therefore, the child who enters the first grade at six should enter the second at seven, the third at eight, and so on, grade by grade. And further, from the administrative point of view, the state expects to provide the child with only eight years of grade schooling, which is to begin at the age of six. From this point of view the child who waits till he is seven before entering is already behind the schedule. He will get out later and have one year less of economically productive working life, and that is what the state has in view in the education of its children.

The Tabulated Statistics.—The complete results of the investigation are given in Table A. This gives the grade-age status of 17,279 grade children in fifty-five cities and villages of Minnesota. They were gathered in the fall and account for children actually enrolled. This makes the showing favorable to the schools, for some children who failed to win promotion no doubt dropped out during the summer.

Retardation is computed upon the Minnesota basis of entering at six, and spending a single year and no more, in each grade.

TABLE A

Shows, grade by grade, and by sex, the amount of retardation

Grade	Numbers			Percentages					
				Retarded		Normal		Advanced	
	Total	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	2691	1436	1255	38.7	33.6	63.8	59.0	7.5	7.4
2	2065	1096	969	54.0	41.1	37.8	47.2	8.2	11.7
3	2164	1134	1030	61.1	57.7	33.1	40.9	5.8	7.4
4	2268	1134	1134	65.9	56.1	28.2	35.5	5.9	8.4
5	2129	1109	1020	68.8	63.2	25.2	29.8	6.0	7.0
6	1944	977	967	73.7	67.7	21.0	25.0	5.3	8.0
7	1862	929	933	70.4	65.9	24.3	27.1	5.3	7.0
8	2007	886	1121	74.0	67.0	30.5	26.4	5.8	6.6
Total 17,279				Averages: 58.9		34.2		7.1	

In studying this table you will note three things, all, probably, contrary to popular belief. First, the boys equal or exceed the girls in number in every grade up to the seventh, where they fall only four behind. It is in, or at the close of, the seventh grade, then, that the boy meets his decisive defeat. Second, the workings of the process of elimination can be clearly seen in the last three grades. The normally placed child would enter the sixth grade at eleven; the retarded ones would be older. But discouragement, economic pressure in the homes, and the non-applicability or the non-enforcement of the truancy law permits them to drop out. Third, the retardation begins heavily in the very first grade and steadily increases grade by grade through the eighth grade, with the exception of the downward drop of the curve in the seventh grade, due probably to the working of the law of elimination. Also, the retardation of the boys is greater than that of the girls right from the start, and remains so, grade by grade, varying from an excess of 5.1 in the first grade to 7 per cent. in the eighth grade.

The average percentage of retardation officially reported to exist in these schools, under their own standard of requirements is 58.7. As I have said elsewhere when the course of study makes requirements, such that only 41.3 per cent. of the pupils can and do meet them, we have a curious state of affairs resulting, where to be abnormal is the usual or normal state of affairs.

Reduced to the Ayres Standard.—The Ayres method of computing retardation would be incorrect according to the conditions governing the school systems under consideration. But for the sake of comparison, the data on hand have been computed by that method and the results are shown in Table B.

There the average percentage of retardation is 30.9 per cent. And that is serious enough. This, however, is only 52.6 per cent. of that amount known to exist in these schools. The balance is concealed by the allowance of an extra year in the grades, for possible late entrance, when such entrances are so few as to warrant no such allowance.

The Ayres figures for thirty-one important cities give an average of 33.7 per cent. of retarded children, varying from 7.5 in Medford, Mass., to 75.8 per cent. among the colored children of Memphis, Tenn.

TABLE B

This is Table A reduced to the Ayres standard for retardation

Grade	Numbers			Percentages					
				Retarded		Normal		Advanced	
	Total	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	2691	1436	1255	14.6	9.1	77.9	83.5	7.5	7.4
2	2065	1096	969	22.5	17.3	69.3	71.0	8.2	11.7
3	2164	1134	1030	30.6	20.8	63.6	71.8	5.8	7.4
4	2268	1134	1134	38.2	27.7	55.9	63.9	5.9	8.4
5	2129	1109	1020	44.2	34.8	49.8	58.2	6.0	7.0
6	1944	977	967	47.4	38.5	47.3	53.5	5.3	8.0
7	1862	929	933	44.2	36.3	50.5	56.4	5.3	7.0
8	2007	886	1121	45.3	39.5	49.2	53.9	5.5	6.6
Total	17.279		Aver.	30.9		62.0		7.1	

TABLE C

Some statistics for purposes of comparison

Children in Grades	Minnesota	Ayres
Of fifty-five systems	58.7	30.9
Of forty-one systems (4–5 teachers)	64.6	33.9
Of four special systems	66.5	33.7
Of St. Paul system		56.5
Of Fargo, N. D., system	55.6	24.9

The forty-one schools given in item two are what are termed "graded schools" in Minnesota. They are small but inspected schools ranking below systems having high schools. They are mostly small, with four to five teachers. They enroll 5,340 grade pupils.

The four "special" cities are large systems whose figures are not included with the fifty-five cities given above. They are conceded to be among the best in the state. They enroll 3,753 grade pupils.

There are 2,087 children in the Fargo contingent.

The St. Paul enrollment in round numbers was	23,000
The other 101 cities and villages enroll ..	28,459
Table C carries this total	51,459

Repeaters.—Possibly one of the best ways to get at the real loss in a school system is to

compute it from the number of repeaters. Here no confusion results over the question of their age at entrance nor the age limits proper for each grade. Elimination works confusion here as well as by the first method tried. And we must bear in mind that repeaters are only one year's contribution to the full army of retarded children. Financially it is only during the time he repeats that the retarded child costs the taxpayer anything.

In order to ascertain at first hand the amount of repeating in the schools of Minnesota, I recently sent out a printed questionnaire to all the superintendents in the state. Ninety-six, which is nearly half, replied promptly with well-arranged data.

The figures given include a total of 40,710 grade children and 8,302 high-school students. To this number we might add about 28,000 pupils in the grade and high schools of St. Paul which are not included in the main results. That makes a total of 77,012 children investigated as to the repeating among them.

The number of children repeating the work of their grade for this year was found to be as follows:

Grades								
1st	2d	3d	4th	5th	6th	7th	8th	Total
664	309	296	374	396	330	318	443	3,130

Also, 168 others are repeating the work for the second time.

And in the high schools 981 are repeating one subject; 335, two subjects; 108, three subjects, and 60 all four subjects. That is equal to a total of 2,214 in single subjects, or, dividing by four, the number of subjects usually carried by a high school student, we have the equivalent of 553 high school students repeating full work.

This is 7.4 per cent. of the total enrollment in the 96 systems. But this does not adequately measure the ground lost last year in these schools, for two reasons. First, the statistics being gathered in the fall from the actual enrollment of the schools and not compiled from office records does not account for the number of students who dropped out during the summer, and the number thus eliminated must be considerable. Second, and this is an important factor, never alluded to, so far as I have discovered, in the literature of the subject, there is a practise, almost uniform among superintendents, of promoting a child at the end of two years in a given grade, whether his work merits it or not. This practise conceals a considerable amount of the very worst sort of repeating, and likewise, by forcing the child on through the grades, whether deserving or not, reduces the apparent amount of retardation. Akin to this practise is another which has the same effects, of promoting "on trial" children who do not quite meet the requirements, but for one reason or another are permitted to continue on with the class. And need it be added that when once a child has been allowed to go on with the class he is rarely reduced to the grade below, no matter how poor his work?

The data show 1,612 children promoted on trial; there are no figures for the number arbitrarily promoted at the end of the second year in the grade. It is certain that these two practises reduce the actual number of repeating and retarded children considerably.

Compared with Ayres's Results.—While my figures show a considerably larger percentage of retarded children, those of Ayres, curiously enough, show in the fifty-five leading cities given in his tabulated report, that the average percentage of repeaters is 15.4. That is due, I think, to the fact that his method conceals part of the retardation but not of the repeating. Repeating is high in the large cities. If repeating is high retardation should be.

Having carefully studied the laggards in our Minnesota schools from two standpoints, it is interesting to note how strikingly the results agree. We found the percentage of retardation to be 58.9 and that of repeaters to be 7.4. Now, bearing in mind that the number of repeaters is merely one year's quota of retarded ones, and multiplying 7.4 by eight, the number of years in the grade course, we have 59.2 as the calculated number of laggards. The ascertained number is only .3 of one per cent. less than this.

The Money Cost of the Laggards.—School administrators and the public generally would

consider the gist of the whole problem to be its fearful money cost. Money spent on doing the same work twice over is money wasted.

Minnesota spends annually for her schools about $15,000,000, and if 7.4 per cent. of this is spent on repeaters then the loss is $1,110,000.

It is estimated that the nation similarly loses from 57 to 80 millions from the same cause.

We justly boast of our great school fund in Minnesota, of about $27,000,000, but here is a sum two or three times as great wasted yearly in the United States because of loss and waste in our management of the public schools along this one line alone.

The True Loss.—The true loss, however, is the spiritual one, which refuses to submit to statistical investigation. The retarded pupils personally lose that fine spirit of initiative, of progress, of growth, of self reliance and of eagerness to achieve, which constitutes the chief glory of youth, and which sends him from school into life an effective member of society. By allowing him to become retarded that birthright of the American boy is traded for the pottage of idleness, failure and self-distrust.

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ANOKA, MINN.

AN ANTHROPOLOGICAL SURVEY OF CANADA

A STEP forward in the development of anthropological studies in America was taken September 1, 1910, by the establishment of a division of anthropology under the Geological Survey of Canada. This gives anthropology a government status in Canada similar to that which it enjoys in the United States, where the Bureau of American Ethnology is recognized as the most important body undertaking the study of aboriginal America. The establishment of the Canadian Division of Anthropology was due primarily to the activity of a committee of the British Association for the Advancement of Science, on the Ethnographical Survey of Canada. This committee, of which Rev. Dr. G. Bryce was chairman, was appointed in 1909 at the Winnipeg meeting of the Association[1] and recommended to the Dominion Government the establishment of a systematic anthropological survey of Canada in connection with the opening of the new national museum. The recommendations of this committee were supported by delegations of the Archæological Institute of America and the Royal Society of Canada.[2] Though the actual governmental recognition of anthropological work in Canada is thus to be immediately credited to the efforts of these scientific societies, in a larger sense the anthropological division is the outcome of many years work on the part of Dr. G. M. Dawson, formerly the director of the Geological Survey, and Dr. Franz Boas. These may be said to have started the ball rolling, the former by the work on the natives of British Columbia that he did in connection with his geological surveys, the latter by the more systematic undertaking of ethnologic, physical anthropologic, and linguistic studies in the same part of Canada in the eighties and nineties under the auspices of the British Association. The present affiliation of the division of anthropology with the Geological Survey is in a large measure due to the personality of Dr. Dawson, to whose earlier efforts, at last analysis, is mainly due the recognition by the Canadian government of the importance of anthropological work. The ethnological and archæological collections of the national museum have their nucleus in collections either obtained by Dawson himself or through his efforts. It is interesting in passing to note that the Bureau of American Ethnology at Washington began by affiliation with the United States Geological Survey, the connecting personality in that case being J. W. Powell.

At the present time the anthropological di-

[1] See Report of the 79th Meeting of the British Association for the Advancement of Science (Winnipeg, 1909), London, 1910, p. cxxxviii. See also Professor J. L. Myres's address to Section H, *ibid.*, pp. 616, 617.

[2] See Report of the 80th Meeting of the British Association for the Advancement of Science (Sheffield, 1910), London, 1911, pp. 265, 266.