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A MODERN SCHOOL

BY
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INTRODUCTION

I

A NEW edition of "A Modern School" is long since overdue. It has been delayed for several reasons—an accident by which I was disabled for a year and a half, the pressure of affairs which could not be deferred, and, finally, lengthy, though intermittent, conferences and correspondence with teachers interested in classical education in the effort to arrive at a statement on controverted points which would clear away both error and misconception. In matters in which opinion and interpretation play so important a part it is difficult, if not impossible, to satisfy both one's self and one's critics. But I have frankly endeavored to look at the matters under discussion from every angle which has developed, and both in this introduction and in the text have made corrections, explanations and modifications wherever, and as far as, they seemed to me to be required. It has been suggested by several persons whose judgment I greatly respect that a few succinct statements would most effectually deal with the paragraphs involving statistics. I find myself, unfortunately, unable to take this view; for figures alone do not tell the whole story; their meaning becomes clear only when other essential facts have been taken into consideration. Needless to say, were I writing the pamphlet in the light of the debate which it occasioned, I could readily avoid a certain amount of misunderstanding by treating a number of matters at greater length; but no changes introduced, whether in form or conception, would affect the fundamental thesis or the substance of the argument.

II

The particular passages in the original publication to which exception has been taken on statistical grounds ran as follows:

"It is perhaps worth while stopping long enough to show by figures the extent to which our current teaching fails. Complete

statistics which would tell us how many of all the pupils who study Latin and algebra and geometry fail to master them do not exist. But we know that a large percentage of the better students of these subjects try the College Entrance Examinations, and that for these examinations many receive special drill in addition to the regular teaching. Now in the examinations held by the College Entrance Board in 1915, 76.6 per cent. of the candidates failed to make even a mark of 60 per cent. in Cicero; 75 per cent. failed to make a mark of 60 per cent. in the first six books of Vergil, every line of which they had presumably read and re-read; 69.7 per cent. of those examined in algebra from quadratics on failed to make as much as 60 per cent.; 42.4 per cent. failed to make 60 per cent. in plane geometry. What would the record be if all who studied these subjects were thus examined by an impartial outside body? Probably some of those who fail do not do themselves justice; but as many—perhaps more—of the few who reach the really low mark of 60 per cent. do so by means of devices that represent stultification rather than intelligence. For nothing is commoner in the teaching of ancient languages and formal mathematics than drilling in arbitrary signs by means of which pupils determine mechanically what they should do, without intelligent insight into what they are doing. It is therefore useless to inquire whether a knowledge of Latin and mathematics is valuable, because pupils do not get it; and it is equally beside the mark to ask whether the effort to obtain this knowledge is a valuable discipline, since failure is so widespread that the only habits acquired through failing to learn Latin or algebra are habits of slipshod work, of guessing and of mechanical application of formulæ, not themselves understood.” (Pages 6-7)

And again:

“I have quoted figures to show how egregiously we fail to teach Latin. These figures mean that instead of getting orderly training by solving difficulties in Latin translation or composition, pupils guess, fumble, receive surreptitious assistance or accept on faith the injunctions of teacher and grammar. The only discipline that most students could get from their classical studies is a discipline in doing things as they should not be done.” (Pages 18-19.)

While the fact that the figures are accurately quoted has not been questioned, several objections to their use have been made, in so far as Latin is concerned: (1) that the figures used are those of an examination that was passing out of use; (2) that they refer to only 128 papers out of a total of almost 6,000; (3) that all other papers in the same examination make a showing decidedly better than the figures

used; hence, it has been argued that in so far as the pamphlet appears to rest its case on the statistics of the College Entrance Board, the verdict as respects Latin should have been favorable rather than otherwise; (4) that, though no direct statement to this effect is made, the reader is left with the impression that the inefficiency of Latin teaching, in so far as the College Entrance Board figures are concerned, is comparative as well as absolute.

In reference to these four points, points (1), (2), and in part (3) are well taken. As the paragraph stood, many readers naturally inferred that the instances cited were representative. They are, in fact, extreme, not average, cases, and should have been so characterized. Furthermore, I should unquestionably have stated the number of candidates represented by them, the number taking other examinations and the percentages achieved by them. The reader would then have perceived the exact situation, in so far as it is portrayed by the College Entrance figures, viz., that while it is true, as the text states, that a small number (128) of candidates in Cicero and Æneid made a low score, a much larger number (1210) did better, though still not well (46.9% made 60% and over) in Cicero and sight reading, and a considerable number (776) made a distinctly better showing (61.1% made 60% and over) in Vergil and sight reading; in advanced composition (730 cases) 53.8% made 60 or over. I should have also said that, taking all examinations, elementary as well as advanced, of 5,979 papers, 59% ranked 60% and over. Though, in my judgment, as will shortly appear, the complete figures tend to establish the inefficiency of Latin teaching, it undoubtedly proved to be misleading to assert that the figures actually quoted show failure to teach the subject: to show that I should have quoted the figures fully—as I shall do in this introduction.

After making the preceding correction and explanation, the main issues remain:

1. Is Latin well or ill taught?
2. What light do the College Entrance Board records throw on the subject?

The latter question should be divided into two parts:

- a. Do the College Entrance Board statistics, as far as they go, point to successful or unsuccessful teaching of Latin?

b. How does the teaching of Latin compare with the teaching of other subjects, as far as the College Entrance Board records enable us to judge?

1. *Is Latin well or ill taught?*

It is impossible to make statistical statements regarding the hundreds of thousands who year after year devote considerable time to the study of Latin. But experience enables each of us to answer for himself and a goodly number of others. Is any one in serious doubt as to the extent and quality of the accomplishments of his school and college fellows in respect to Latin? On this point nothing would be gained by citing the opinions of persons who are so thoroughly convinced of the failure of current Latin teaching that they see little or no value even in the effort. But opinions sufficiently suggestive may be quoted from persons of decided humanistic leanings. For example, President Butler, of Columbia University, who, writing of the classics, testifies to his "strong conviction as to their supreme importance as elements and instruments of a liberal education,"¹ nevertheless states that "Greek and Latin have been in large degree asphyxiated by wholly wrongheaded methods of teaching."² President Neilson, of Smith College, in his own words "a profound believer in the classics," "a humanist by training and tradition," has this to say of the results of our efforts to teach Latin and Greek:

"The foundation of the revolt against the classics is a widespread indignation at being cheated. Hundreds of thousands of students have spent the major part of their studying time for years upon two languages with the implicit understanding that they would finally have access to two great civilizations through reading the records in the original tongues. They paid the price in time and energy and at the end they did not get what they had paid for. They could not read Latin or Greek, or could not read either

¹ *Value of the Classics* (Princeton University Press, 1917), p. 41.

² *Educational Review*, January, 1919, p. 73. The rest of the sentence bears out the figures given later in this introduction (p. x): "and French and German are a sad spectacle to look upon." In his recent Annual Report, President Butler discusses the point comparatively: "More criticism than was ever leveled against the study of Latin, Greek and mathematics, based upon the meager practical results obtained, can be repeated with equal force against those newer subjects of school and college study which have so largely displaced Latin, Greek and mathematics." For consideration of this argument, see *infra*, p. xi.

with such a degree of ease or pleasure as to induce two per cent. to keep it up."¹

Lord Bryce would seem to concur:

"Of the whole number of those who yearly graduate at Oxford or at Cambridge, I doubt if at thirty years of age 15 per cent. could read at sight an easy piece of Latin, or 5 per cent. an easy piece of Greek."²

The statement of my pamphlet that Latin is unsuccessfully taught is therefore sustained not only by common knowledge and experience, but by the deliberate judgment of teachers, administrators and others entirely friendly to classical studies.

2. (a) *Do the College Entrance Board statistics, as far as they go, point to successful or unsuccessful teaching of Latin?*³

One's answer to this question obviously depends on one's standards of scholarship and achievement. From 1911 to 1918, the several Latin examinations of the College Entrance Board were taken by 56,605 candidates.⁴ Let us regard 60 as the passing mark. The median of those who made over 60 for 8 years was 58.7. One cannot, however, measure efficient teaching by a standard of 60%. Assuredly, if 60 is the passing mark, one is not using an excessively high standard, if one holds that only those who make 75 or better show efficient teaching, i. e. students who do not make 75 are hardly likely to know Latin enough to enter into the spirit

¹Inaugural Address (Northampton, Mass., 1918), pp. 42-43. In answer to an inquiry as to how the two per cent. was arrived at, President Neilson writes:

"The two per cent. still represents my views, but it is not based upon statistics, nor can it be. I know of no method by which you can get at statistical information on this point, but that represents my conclusions after a consideration of a large number of students in different countries. Something, however, can be learned from the tables at the end of Mr. Eliot's pamphlet on 'Latin and the A. B. Degree.' There you will find that when compulsion is removed, the percentage of students continuing Latin or Greek runs from four to eight per cent., as I recall it. To suppose that a half or a quarter of that number keep on reading the classics for pleasure would be to be very generous to the classicists. That is all my two per cent. involves."

²The Worth of Ancient Literature to the Modern World (N. Y., 1917), p. 4. It is interesting to note that neither Lord Bryce nor President Neilson feels under any constraint to apologize for failure to teach Latin by citing failure in other subjects.

³I am here considering the question absolutely, not comparatively. For a discussion of the subject from the comparative point of view, see pp. viii-xii.

⁴More accurately, 56,605 examination books were handed in. As candidates are usually examined in more than one Latin subdivision, the actual number of individual candidates was considerably smaller.

of the language—the only sort of achievement that for the time being at any rate can in my judgment justify language study.¹ The following table shows the percentage of applicants who from 1914 to 1918 made 75% or more:

1914	1915	1916	1917	1918	Average 5 years
22.0%	26.8%	31.7%	23.4%	24.4%	26.24%

That is to say, of the group of Latin students applying through the College Entrance Board for admission to college, during a period of five years, approximately three-fourths make less than 75, that is, a "C" grade or worse.²

In other words, the College Entrance Board statistics taken in the large sustain the position taken in my pamphlet, viz., that Latin is inefficiently taught. Nor is this only *my* interpretation. Professor Strayer, of Teachers College, to whom the complete figures for 1915 were submitted for an opinion, comments as follows: "The case against Latin seems to me to be made even if one were to take all of the statistics." Even more significant perhaps, because it is the judgment of a competent Latinist, is the opinion of Professor Nelson G. McCrea, of Columbia, for many years one of the College Board Examiners in Latin. In discussing the results of the examinations in 1914, Professor McCrea characterizes the general percentages of the Board in Latin as "intolerably low" and appeals to his fellow-teachers throughout the country to duplicate the success *actually* achieved by seven schools whose combined performance in each division of the examinations in Latin was (as he shows by detailed statistics) from 17 to 34 per cent. above the general figures of the Board.³ There has been a slight improvement since 1914, but not enough to alter the sig-

¹See, *infra*, p. xii and p. 9. I do not undertake to discuss here or in the passages above referred to what, if anything, students permanently gain from studies that they do not master or that they shortly forget; but, in language, ancient or modern, study that fails to result in any kind of practical acquaintance or knowledge, seems to me to be worse than a mere waste of time.

²Seventy-five is interpreted as a "C" grade at Harvard and Yale Universities. Indeed grades somewhat above 75 are also at times regarded as in the "C" class.

³The *Classical Journal*, Vol. X (1915), p. 357. The passage is as follows:

"The general percentages of the Board in Latin are intolerably low. Is it not incumbent upon every self-respecting teacher of Latin, despite the difficulties, often very serious difficulties, with which he may have to contend, resolutely to decline to admit that others may be able to produce concrete, business-like results, but not he? In many places in the country and especially here in New England, the teaching of Latin is more keenly alive, more flexible

nificance of the situation, viewed as a whole. As to this I am entirely willing to substitute Professor McCrea's paper, above quoted, with its statistics, illustrations and conclusions for my own; I find no essential difference between us.

One other point must, however, not be lost sight of. The College Board results in any subject can not, taken by themselves, be the sole or main criterion for either general failure or general success because, in the first place, they represent too few cases, and because, in the second, they represent a more or less selected group. The Commissioner of Education reported in 1915—for the schools, public and private, that reported studies—503,985 pupils as taking Latin. This large number—and it is not quite complete—is distributed through four years. Of those who drop out without completing the course, we have no statistical knowledge as to how many succeed, how many fail; of those who complete the Latin course, obviously no considerable number take the College Entrance Board examinations.¹ Thus the College Entrance Board figures are not complete enough or representative enough to portray the entire situation. In any case the author's opinion was formed before the College Entrance Board report was consulted, and does not rest on College Board statistics. The figures were merely illustrative.

That Latin can under favorable circumstances be more successfully taught no one denies. The pamphlet called attention to the conditions under which the Germans succeed (page 2). A corresponding statement, *mutatis mutandis*, might also have been made regarding England and France. Professor McCrea, as I have already pointed out, in his studies of the College Entrance Board returns 1915-1917 compiles tables for Latin in which, subject by subject, the records of all candidates are compared with the records made by the pupils sent up for examination by three groups of schools, one group containing the pupils from seven schools, the second containing pupils from eleven schools, and the third containing pupils from sixteen schools. While of all students taken together 63.4% make an average of 60 or more, of those from the seven schools 88.7% make 60 or more, of those from and sympathetic in its adjustment to the rightful demands of modern life, than ever before. But it is far from being so everywhere, and the classical associations of the country must still inspire and show the way."

¹In 1915, there were 5979 examination books; the number of individuals examined was between three and four thousand.

eleven schools, 86% make 60 or more, and of those from the sixteen schools, 85.9% make 60 or more.¹ That is, in America, as in Germany, selected groups can and do surpass the average. Undoubtedly results are still further improvable. It is not proposed to deprive students who find their most effective and congenial development through classical media of the opportunity to study Latin and Greek. The establishment of Modern Schools will not interfere with the classical training of those who prefer it or do best with it.

As to point (4), viz., comparisons between Latin and other subjects, the only comparative statement, actual or implied, that my pamphlet made, is by implication to the advantage rather than the disadvantage of Latin: "The subject of mathematics offers peculiar difficulty. Perhaps nowhere else is waste through failure so great"—a statement, by the way, which, I now find, is not sustained by the College Entrance Board results. I shall in a moment introduce and discuss comparative material brought up to date, but let me first point out that my pamphlet did not attempt to gloss over our failure to teach other subjects. It admitted failure and urged thoroughgoing reconstruction. Mathematics was spoken of in severer terms than Latin; science teaching was criticized as "disappointing" (page 11)²; of our teaching of literature and language, I said: "Perhaps in no other realm would a realistic view play greater havoc with established routine"; the terms, "obsolete," "ill-timed," "wasteful," "futile," were applied to the current teaching of literature (page 11); of history: "the realistic approach may make as much difference in history as in literature" (page 14). Thus it is evident that I did not spare other subjects in order to place Latin on an objectionable eminence. Bad instruction in these subjects is just as reprehensible as bad instruction in Latin—and the same terms ought to be applied to all. The pamphlet treats them *all* in their present forms as failures and proposes for *all* without exception radical treatment of one sort or another.

The Secretary of the College Entrance Board has prepared for me the following painstaking compilation of individual records in every subject in which the total number of candidates examined during eight years (1911-1918) was at least 1,000.

¹The Classical Journal, Vol. XII (1917), page 583.

²References to former edition.

PERCENTAGE OF CANDIDATES SECURING 60%—100%

	TOTAL NO. OF CANDI- DATES	MEDIAN FOR 8 YEARS	1911	1912	1913	1914	1915	1916	1917	1918	NO. OF YRS. ABOVE MEDIAN ¹	NO. OF YRS. BELOW MEDIAN
All Subjects	241,270	52.8	52.7	54.4	54.8	52.1	52.2	49.6	52.9	55.4		
Greek . .	6,578	66.5	+ 6.5	+11.1	+18.6	+15.6	+23.9	+ 7.4	+18.7	+12.1	8	0
French . .	23,727	61.5	+ 3.3	+ 9.3	+ 5.7	+ 9.8	+ 9.3	+24.1	+ 0.4	+ 2.6	8	0
Latin . .	56,605	58.7	+ 8.4	+ 1.5	- 3.4	+ 4.3	+ 6.8	+13.5	+ 4.7	+ 4.5	7	1
Physics . .	8,324	53.8	+ 1.1	-12.0	+ 3.7	+ 3.4	+ 7.1	+ 0.2	+ 6.7	- 2.5	6	2
Mathematics	61,034	53.4	- 8.9	+ 5.6	+ 5.9	- 3.5	- 4.5	- 9.1	+ 7.6	+ 7.5	4	4
Chemistry .	5,897	52.1	+ 9.1	+ 3.0	- 0.4	+10.2	+ 0.3	- 7.3	- 2.0	- 3.2	4	4
German . .	19,222	49.9	- 3.8	- 6.9	+ 2.3	- 4.1	+ 5.7	+ 1.0	- 7.3	- 8.0	3	5
English . .	34,968	43.3	- 2.7	- 0.7	- 6.5	- 0.5	- 9.1	- 7.8	-13.5	- 5.8	0	8
History . .	21,811	36.3	- 7.1	-20.6	-16.7	-17.7	-20.4	-20.5	-10.8	-17.5	0	8

¹The figures for each subject in the separate years 1911-1918 indicate the position of that subject above or below the percentage of success in *all subjects* in that year. For example, the percentage of success in Greek in 1911 was 59.2%, which is 6.5% *above* the record, 52.7%, made in that year by the whole series of examinations in all subjects. In the same way, the entry, -2.7 for English in 1911, indicates a record for that year of 50.0%.

Thus of nine subjects treated in one way, Latin comes third. If, with a view to employing a standard nearer to real effectiveness, we take 75 as the dividing line, the nine main subjects make the following record from 1914 to 1918, both inclusive:

PERCENTAGE OF CANDIDATES MAKING 75%-100% IN VARIOUS SUBJECTS (1914-1918)

	1914	1915	1916	1917	1918	AVERAGE 5 YEARS
Greek . . .	38.7	51.2	27.6	39.3	36.3	37.56
French . . .	27.1	27.0	37.6	19.4	22.7	28.25
Mathematics . .	23.3	21.8	15.7	33.4	36.5	26.72
Latin . . .	22.0	26.8	31.7	23.4	24.4	26.24
Physics . . .	28.1	33.0	22.4	28.3	19.4	24.67
German . . .	19.2	29.0	22.2	16.2	14.0	19.68
Chemistry . . .	28.7	19.4	13.4	20.5	18.7	18.73
English . . .	15.5	10.9	10.7	8.8	13.2	11.12
History . . .	7.0	6.6	6.1	10.5	9.7	8.17

On this basis, Latin comes fourth; but there is no significant difference between French, mathematics, Latin and physics. German and chemistry are inferior; English and history notably so. Greek alone makes a fairly satisfactory showing—a fact that is surely significant in connection with the treatment of Latin favored by the whole argument for the Modern School. I should also point out that the College Board results do not indicate that there is greater waste in mathematics than elsewhere, though, of course, the Board's statistics do not tell the whole tale as to that or any other point.

The further interpretation of these figures raises a number of problems. Are the results really comparable in the sense that questions and grading are so standardized that relative rank may fairly be taken as a measure of relative instructional efficiency? After some years of experience we are not yet in position to speak confidently of the precise significance of tests worked out in the common elementary school branches—spelling, arithmetic, handwriting, and composition.¹ Yet measurement in these subjects with a view to

¹This subject is exhaustively treated in the report entitled *Measurement of Classroom Products in the Gary Schools*, by S. A. Courtis, issued by the General Education Board.

a determination of relative efficiency is child's play compared to measurement in the complex subject matter of the different College Entrance examinations. Hence, except for the most general purposes, comparative tables, such as those above quoted, most of them showing relatively slight differences, are incapable of exact interpretation.

But comparison is for another set of reasons unsafe. Latin and mathematics form the backbone of the conventional curriculum; they get most time and most emphasis. They have been taught for centuries; the material is highly organized; the technique more or less perfected. These facts are often urged as among the reasons why it is safest and best to require Latin. Failure under these conditions is, as I view it, more significant than simultaneous failure in the newer subjects, admittedly unorganized and at an additional disadvantage in respect to time and emphasis. The modern subjects have had to edge their way into the curriculum; their subject matter is less well organized; the proper point of view and teaching method are still largely undetermined. To their sound development the College Entrance requirements as now formulated, largely, I believe, under the influence of the current methods of teaching Latin, Greek and mathematics, are, to say the least, a serious hindrance. For my own part I feel sure that these subjects will not be well taught except in schools in which they are made the prime concern, free from the specific limitations of the usual College Entrance requirements. I do not see how under existing circumstances failure to teach German or physics satisfactorily alters the significance of failure to teach Latin or algebra. For these reasons I originally attached, and after all the discussion I still attach, little importance to the contention that in the College Entrance Board statistics other subjects fare in most instances worse than Latin or mathematics. Does the situation not rather raise the question to which the essay suggested an answer, viz., as to whether differentiation, involving the formulation of new educational ends and the creation of new educational procedures, is not urgently needed?

The preceding discussion is unavoidably elaborate, because I wished to include all the College Entrance Board figures. I have, I hope, made it clear that, if the issue is narrowly confined to these figures, the contentions of my critics are in part correct—that is,

Latin ranks toward the top, not toward the bottom of the column, etc. But though my phraseology undoubtedly conveyed to many readers the impression that I was basing my argument on these figures, something very different was in my mind. I was, as I have tried to say in this introduction, considering school performance in Latin and mathematics as the prominent, strongly emphasized and time-consuming subjects of the traditional curriculum. Hence a statistical comparison that ignores differences in prominence, emphasis and time gets us nowhere. These differences in prominence, emphasis and time are great as between Latin and mathematics, on the one hand, and science and modern foreign languages on the other; they are serious, very serious, as between Latin and mathematics, on the one hand, and even English and history on the other. Granting therefore all possible weight to what has been urged on the subject of the College Entrance Board statistics, I should still maintain that my fundamental position has not been shaken; nay more, that the College Board figures, viewed in their completeness over a series of years, support my contention.

The truth is that we teach Latin and higher mathematics to huge, non-selected masses and we have failed, as we were bound to fail, even where the teachers themselves were competent. Where the effort to teach the subject matter as such has broken down, the procedure is apt to be sustained by the plea that, though the languages may not be mastered, the discipline is valuable. It is with unsuccessful Latin and mathematics teaching from this, the disciplinary point of view, that I am dealing. The study of Latin and Greek from the point of view of content with a view to actual grasp of subject matter is an altogether different matter. No argument, based upon the failure of compulsory Latin as formal discipline, has any force whatsoever against Latin or Greek or Hebrew mastered as languages or literatures. The very fact that they are mastered makes them living tongues—expressing ideas; they are then genuine, real, serving actual purposes, no longer formal instruments unsuccessfully devoted to theoretic or imagined ends. Recent changes in the entrance requirements to Princeton, Yale, Columbia and other universities make it possible for schools to heed this distinction. Fewer persons will study Latin, just as fewer persons study Greek and Hebrew, but with them an entirely different grade of achievement may be fairly aimed at. There remain, however, those whose abili-

ties and inclinations run in other channels—a vast and increasing body of students of the utmost social importance. For them assuredly there are educationally better things than a discipline which does not and in many cases cannot succeed. Meanwhile, not a few of these, in addition to that immediate access to life attempted by the Modern School, may conceivably obtain from history and through translations a clearer insight into the meaning of antiquity than they would have obtained from the compulsory study of grammar, syntax and a few specified texts.

III

Let us now pass from the statistical point to the question of educational policy. How should educational procedure be affected by the considerations above presented? The discussion of the last few years seems to indicate three types of opinion. There are first those classicists who find comfort in the fact that the teaching of other subjects is poor and, in some instances, poorer than the teaching of Latin. There is a second group represented by Professor McCrea who, while admitting that the results in Latin are “intolerably low,” contrast the poor general results with the better results obtained by a few schools and conclude that the figures show primarily the need of more competent, enlightened and progressive teaching. There is, to my mind, a question as to how far the situation can be thus met. If, as I have pointed out, Professor McCrea’s standard were raised from 60 per cent. to 75 per cent., so as to distinguish sharply between really successful and more or less unsuccessful teaching, then the selected schools would make a less satisfactory showing. One wonders therefore whether most schools can bring enough students to a standard sufficiently high to justify the continuance of Latin in its traditional position in the curriculum, even though the other aspects of the secondary school problem are for the moment ignored.

The third interpretation, which is the interpretation upon which the case for the Modern School is based, might be formulated as follows:

Whatever allowance be made for an improved showing due to improved teaching, the relative importance of Latin has as a matter of fact declined; new bodies of knowledge and experience have been developed; educational procedures more congenial to large numbers

of students have been and must still further be developed.¹ If this view be correct, as I believe it to be, failure in the traditional subjects, while due in part to ineffective teaching, is also due in part to the diminished appeal of the subjects in question and in part to competition from other sources. Thus, whatever improvement in the teaching of the conventional subjects may be effected, a case can no longer be made out for compulsory Latin and mathematics of the conventional type; hence the need and the possibility of establishing the Modern School.

Perhaps an additional word should be said to explain further why, if compulsory Latin is to be dropped because it is inefficiently taught, French and English and science, also ineffectively taught, are to be retained and greatly elaborated. The question indicates a failure to penetrate to the heart of the matter. An objective analysis of the existing social situation discovers, as far as I can see, no need of compulsory instruction in the elements of Latin. Latin is in this respect in the same position as Greek—a fact more and more generally recognized by the colleges in making Latin, like Greek, optional for admission. That is what I mean when in the pamphlet I say that the position of Latin in the curriculum is traditional; therein lies the fundamental objection to the importance the subject has up to lately maintained. I might very well have rested my argument for the Modern School on this fact. Now comes the additional point that, with centuries of experience and prestige, compulsory Latin instruction does not even achieve its immediate object. Surely we have here two irrefutable arguments for interference: (1) the mere rudiments of the subject bear no vital relation to life; (2) even *they* are not generally learned. Why should they then be longer enforced upon the unsuccessful and unwilling? There is no reason to believe that for pupils in general the subject can be rehabilitated. Meanwhile, once more, let me repeat that this argument has no force against such mastery of the

¹Since the above was written, Mr. Graham Wallas' "Our Social Heritage" (Yale University Press, 1921) has appeared. Speaking of higher education in England, Mr. Wallas says, p. 46: "It was never more than a very small fraction even of exceptionally able young Englishmen who were able to benefit by that renaissance" (viz., in the eighteen twenties and thirties under the leadership of Thomas Arnold and others); "and the need for other kinds of knowledge than Latin and Greek language and literature and pure mathematics is now so urgent that both 'Greats' and the mathematical Tripos are rapidly shrinking for want of candidate." [Italics mine.]

classics as Lord Bryce and Mr. Gilbert Murray advocate and exemplify, nor does it seek to question the value of a knowledge of what is really vital in classical history, art and literature, access to which is not, as a matter of fact, dependent on the study of the elements of the language.

The same statements can be made in regard to conventional mathematics. It bears no relation to life; its place in the curriculum is traditional; it is unsuccessfully taught. Of course, it must go. On the other hand, an objective study of existing facts shows a definite need in every direction of training in quantitative thinking of a vitalized type. Mathematics of a kind and in amounts to be determined will therefore, as I see it, continue to be found in the secondary curriculum. Meanwhile, students eager to develop as mathematical specialists will in the future as in the past range as they please.

On the other hand, failure to teach English or history or science does not relieve us of the responsibility of teaching them generally, because any analysis of life shows that we all need them. We have not taught them with success, partly because there has been too little time and emphasis, partly because the methods of teaching have been too largely taken over from the methods developed in teaching the formal and traditional subjects, partly for lack of a trained and competent personnel. But whatever the causes, we need these subjects, culturally and practically; they are imbedded in the very conditions of current living. Failure is thus only a challenge to more resourceful and determined effort, for the thing must be done, and on a large scale. It is not indeed educationally the only thing that must be done, but it is perhaps the most urgent. How well it can be done on the large scale upon which we have embarked remains to be ascertained through experience. Between the modern subjects (English, history, literature, vitalized mathematics, and science) on the one hand, and Greek, Latin and formal mathematics on the other, there is also this important difference: in the very act of living we build out and develop the modern subjects. They are needed; they are used; thus experience tends to develop them quantitatively and qualitatively, beyond the stage at which we leave them at school—just as it does in the case of spelling, composition and arithmetic. Contrariwise, Latin, Greek and formal mathematics tend to shrink. Their state grows

worse, not better, with the passage of time. Only the very small number who make a profession of them, or, like Lord Bryce, a hobby, improve and develop them beyond the school stage. Inefficient teaching of modern subjects may therefore be in a degree redeemed by subsequent experience; inefficient teaching of the traditional subjects is far less apt to be compensated. Taught with equal inefficiency, the individual, twenty years later, is likely to make a better showing on the modern than on the traditional side; he is likely to have profited more by inefficient teaching in the modern than in the traditional subjects.

IV

By some persons the Modern School here sketched has been mistakenly regarded as a vocational or utilitarian school. That is, it has been supposed that the author was urging, as a general type of secondary education, the establishment of a school which would primarily train its pupils in the arts and crafts directly connected with the earning of a livelihood. Re-reading the pamphlet carefully and critically, I confess I am at a loss to account for this interpretation of its contents. The Modern School was conceived as a widely available and desirable, but still distinctly liberal, type of training. The author is among those who believe that the current activities, opportunities and ideals of life contain the physical, intellectual and spiritual elements out of which an educational scheme, at once liberal and appealing, can be constructed. Hence, literature, music, and art were conceived as playing important parts in its curriculum, not less than science, industry and modern languages; and all alike were prized, not because they possess possible money value, but partly because they embody activities worth while for their own sake, partly because they put the child into effective relation with the world in which he lives. This is a very different thing from a vocational school or from a utilitarian school, as these words are commonly used. Those therefore who have criticized the Modern School as practical or vocational in the narrow sense of those terms are criticizing something with which this pamphlet does not deal, and which it expressly disavows.¹

I said a moment ago that the Modern School was conceived as a widely available and desirable type of school training. Not, how-

¹ See *infra*, p. 5.

ever, as I have already stated, as the only available and desirable type of school training. Persons, therefore, who object because they suppose that the pamphlet proposed the exclusive domination of modern interests are needlessly alarmed. The modernist in education is not intolerant. He has contended for his right to an education that answers his own needs and purposes; he concedes to those who are conscious of other needs and purposes precisely the same liberty which he himself requires. We may, as time goes on, develop more rather than fewer organized secondary school types. The Modern School may be one; Latin and Greek another; a type in which music and art are the central interests may be a third; commerce, trade and other developing activities will furnish others. If it be true, as the modernist holds, that service is the keynote of modern social life, schools and colleges, dealing with maturing youth, should regard it as of fundamental importance to discover and direct to best advantage the individual's native capacity and bent. Definiteness, thoroughness, and adjustment to personal capacity and opportunity are bound to receive increasing attention. Under such circumstances, a preferred type cannot occupy a predominant position—for this would be to ignore many possibilities of service in order that favorable opportunities in special lines may be provided for relatively few. Those opportunities will not of course be destroyed, for culture of the traditional type, if thorough and genuine, has also its precious service to perform in this modern world. But it will not be artificially "protected." In arguing for an alternative type, where the conventional type either fails, or fails to satisfy, the author finds nothing in the pages of his pamphlet to warrant the interpretation that he expected the Modern School to displace other existing types.

On the other hand, prospective service, important as it is, does not by itself by any means constitute a complete educational program. The world is not mistaken in believing that there are experiences worth while for their own sake, quite regardless of a *terminus ad quem*. Any form of art, knowledge and philosophy may have for this person or that appreciative rather than service value. It is one of the functions of a liberal education to discover as far as possible for each individual the appreciative personal satisfactions of which he is capable. For one person they exist in music, for another in literature, for still others in his-

tory or science. It is of less importance where they are than that they do exist; for disinterested activity may prove the salt that keeps the human spirit wholesome. It is its own sufficient reason for being, regardless of service and of all else.

Be it admitted, however, in all candor that society in general seems bound to regard such free play of the spirit as of necessarily secondary importance. Even those who as a matter of educational theory attach the highest importance to liberal culture demand practical competency in others. Thus when the sincere believer in culture requires a physician or surgeon, an engineer or electrician, he seeks a qualified person—nor does he content himself with professional inferiority if only he can be shown that professional skill has suffered in order that physician or surgeon, engineer or electrician might keep up his scholarship. Moreover, we may not forget that practical competency in certain pursuits at least begins, educationally speaking, far back. A long and broad previous preparation is the only sound basis on which modern training in, for example, medicine or engineering, can rest. Furthermore, one must not forget that efficiency itself is not necessarily materialistic. One person may strive to be practically efficient because it pays; another, because he finds the satisfaction of the artist in doing his task in a workmanlike manner; still another, because he is inspired by scientific imagination. Infinitely different and complex may be the motivating forces which express themselves in similar concrete acts. Poetry, music, science, architecture, journalism, scholarship—each may be self-seeking and material, each may be idealistic and spiritual. Even in so far as practical competency and appreciative enjoyment are separate things, they are not necessarily inconsistent; but the actual adjustment in school as in life is excessively difficult. No formula as yet discovered or devised enables the schoolmaster to hit it off. The best he can do is to try honestly to keep both objectives before him, feeling his way along a path admittedly dark and rocky.

There is perhaps one other point to which attention should be freshly called, viz., the place of interest in the Modern School. The extreme position assuredly no one holds. That is, no one believes that the child's interests should be wholly ignored just as no one believes that the child should be governed completely by his own interests, to say nothing of his whims. Where then is the line to be

drawn? I have tried in this essay to suggest a feasible policy, not dogmatically, but as a basis for careful experimentation.¹ The spontaneous interests and activities of childhood and youth ought to be heeded—heeded, in the sense that they are the raw material provided by nature, to be guided and refined by the teacher. Experience seems to show that much more can be thus accomplished than the schools have yet succeeded in achieving—that is, that a more varied and more significant development is possible than education has yet realized. In the pursuit of this end, however, the child will often lag. Nothing in the modernist's theory suggests that he be indulged or humored. Moreover, the full range of what society requires of an educated person will certainly not be contained within the limits of the child's natural interests.² There are tools he must know how to use, regardless of his instinctive attitude towards them; things he must know, attitudes he must develop, whether he will or not. People may, of course, not always agree as to what these are; but without endeavoring to come to an understanding about all details, the modernist believes in standards and in all rational means of enforcing them upon the child. Correct spelling, a fair hand, the multiplication table and a capacity for prolonged and detailed intellectual effort are to him as to others things to be achieved, like any other necessity in life, and so my pamphlet very distinctly argued and urged.³

V

In the preparation of this introduction, I have profited greatly by helpful criticism and suggestions received from many sources; but I am under especial obligation to Professor Nelson G. McCrea, of

¹ See *infra*, pp. 18–19.

² See *infra*, pp. 17–18.

³ There is undoubtedly danger that the pendulum may at times swing too far. Mr. Wallas' comments are well worth bearing in mind: "School children should learn to recognize and undertake the conscious effort by which thought is made efficient, and to distinguish it, both from the automatic activity of recreative thought, and from the effortless 'interest' stimulated in the members of a class by a skilled and 'magnetic' teacher. A little English boy was sent at the age of six or seven to a well-known Froebelian school which aimed at obliterating the distinction between 'play' and 'lessons'. He said to his father: 'At that school, when they work, they don't really work, and when they play, they don't really play.'" (P. 45, slightly abridged.) And again Mr. Wallas speaks (p. 50) of our "insufficient recognition of the need of civilized man for conscious and sys-

Columbia University, who was good enough to read it several times with great care and to suggest many changes, to Professor Paul H. Hanus, of Harvard, and to Professor Thomas S. Fiske, Secretary of the College Entrance Examination Board, by whose assistants the statistical tables were either prepared or checked.

In conclusion, let me emphasize the fact that for the views expressed in this pamphlet, the author is alone responsible. The General Education Board has in recent years issued many publications; it is likely to issue many more. Towards all alike its attitude is expressed in the following statement, which appears in connection with its list of publications:

The Reports issued by the Board are official accounts of its activities and expenditures. The Studies represent work in the field of educational investigation and research which the Board has made possible by appropriations defraying all or part of the expense involved. The Occasional Papers are essays on matters of current educational discussion, presenting topics of immediate interest from various points of view. In issuing the Studies and Occasional Papers, the Board acts simply as publisher, assuming no responsibility for the opinions of the authors.

New York, Aug. 1, 1921.

ABRAHAM FLEXNER.

tematized intellectual effort": "the clever boy who goes to one of the great universities of the Eastern States at eighteen, either from a public high school or a splendidly equipped preparatory school, may be, as far as I have been able to judge, two years behind an equally clever boy from Winchester or Rugby or Manchester grammar school in his experience of skilled and conscious intellectual effort." (P. 52, slightly abridged.) See *infra*, p. 3.

A MODERN SCHOOL

CURRENT EDUCATION

AS PRESIDENT ELIOT has clearly pointed out in his paper on the "Changes Needed in American Secondary Education," traditional usage still too largely determines both the substance and the purpose of current education. A certain amount of readjustment has indeed taken place; in some respects almost frantic efforts are making to force this or that modern subject into the course of study. But traditional methods and purposes are strong enough to maintain most of the traditional curriculum and to confuse the handling of material introduced in response to the pressure of the modern spirit. It is therefore still true that the bulk of the time and energy of our children at school is devoted to formal work developed by schoolmasters without close or constant reference to present individual or social need. The subjects in question deal predominantly with words or abstractions, remote from use and experience; and they continue to be pursued by children because the race has formed the habit of pursuing them, or, more accurately, the habit of going through the form of pursuing them, rather than because they serve the real purposes of persons living to-day. Generally speaking, it may be safely affirmed that the subjects commonly taught, the time at which they are taught, the manner in which they are taught, and the amounts taught are determined by tradition, not by a fresh and untrammelled consideration of present needs.

I am not forgetful of the fact that the moment a student takes fire in studying any subject, no matter how remote or abstract, it assumes a present reality for him. Thus, sometimes through the personality of the teacher, sometimes through the congeniality of the subject matter, Latin and algebra become as real to some students as woodwork, Shakespeare, biology and current events are to others. It still remains true, however, that these cases are

exceptional; and that most children in the elementary and high schools struggle painfully and ineffectually to bring the subject matter of their studies within a world that is real and genuine to them. The best of them succeed fitfully; large numbers never succeed at all.

Of the traditional curriculum pursued for formal ends, Latin and mathematics constitute the backbone. They get the main stress and most time; and they give the curriculum its distinctive character. Unfortunately complete statistics which would tell us how many of all the pupils who pursue these subjects master them and how many fail to master them do not exist. The records of the College Entrance Examination Board, however, exhibit the results year after year for large numbers of pupils. These statistics, indicating as they do the very unsatisfactory outcome of our efforts in these subjects, are fully sustained by common knowledge. There is no reason to suppose that on the whole the showing would be different if all secondary school pupils were similarly examined by an impartial examining board. Doubtless some of those who make a poor showing do not do themselves justice, but, on the other hand, some of those who attain the passing mark do so by means of devices that stultify rather than develop the intelligence, for in the teaching of ancient languages and formal mathematics pupils are often drilled in the mechanical use of symbols, the meaning of which they are not enabled to penetrate. In Latin the unintelligent use of translations often defeats the purpose of the study. As far as these pupils are concerned, there is no point in inquiring whether a knowledge of Latin and mathematics is valuable, since they do not get it, and it is equally beside the mark to inquire whether the effort to obtain this knowledge constitutes a valuable discipline, since the only habits acquired are habits of slipshod work.

A word should perhaps be said at this point by way of explaining why the Germans appear to succeed where we fail. There are two reasons. In the first place, the German gymnasium makes a ruthless selection. It rejects without compunction large numbers whom we in America endeavor to educate; and on the education of this picked minority it brings to bear such pressure as we can never hope to apply—family pressure, social pressure, official pressure. Under such circumstances, success is possible with relatively small numbers; but the tide of opposition to the monopoly of the classical

gymnasium and the development of modern schools with equivalent privileges show that even in Germany the traditional education has been forced to accept alternative types for different abilities and different inclinations.

But not only do American children as a class fail to gain knowledge or power through the traditional curriculum—they spend an inordinately long time in failing. The period spent in school and college before students begin professional studies is longer in the United States than in any other western country. The saving of two or three years is urgently necessary. The Modern School must therefore not only find what students can really learn, it must feel itself required to solve its problem within a given number of years—the precise number being settled in advance on social, economic, and professional grounds. Its problem may perhaps be formulated in these terms: How much education of a given type can a boy or girl get before reaching the age of, let us say, twenty, on the theory that at that age general opportunities terminate?

A MODERN CONCEPTION OF EDUCATION

Before I undertake to do this, it is necessary to define education for the purposes of this sketch; and for obvious reasons this definition will be framed from a practical rather than from a philosophical point of view. All little children have certain common needs; but, beginning with adolescence, education is full of alternatives. The education planned for children who must leave school at fourteen necessarily differs in extent and thus to a degree in content from that feasible for those who can remain, say, two years longer, so as to acquire the rudiments of a vocation. Still different are the possibilities for children who have the good fortune to remain until they are eighteen or twenty, reasonably free during this lengthened period from the necessity of determining procedure by other than educational considerations. The Modern School of which we are now speaking contemplates liberal and general education in the sense last-mentioned. With regard to children who expect to enjoy such opportunities, what do we moderns mean when we speak of an educated man? How do we know and recognize an educated man in the modern sense? What can he do that an uneducated man—uneducated in a modern sense—cannot do?

I suggest that, in the first place, a man educated in the modern sense has mastered the fundamental tools of knowledge: he can read and write; he can spell the words he is in the habit of using; he can express himself clearly orally or in writing; he can figure correctly and with moderate facility within the limits of practical need; he knows something about the globe on which he lives. So far there is no difference between a man educated in the modern sense and a man educated in any other sense.

There is, however, a marked divergence at the next step. The education which we are criticizing is largely formal and traditional. If objection is made to this or that study on the ground that it is for large numbers useless or unsuitable, the answer comes that it "trains the mind" or has been valued for centuries. "Training the mind" in the sense in which the claim is thus made for algebra or ancient languages is an unproved assumption based on the fact that most persons who possess more or less well trained minds happen to have had to pass through the traditional training; whether that training was in all or in most instances the most effective or suitable training is a point usually ignored. A man educated in the modern sense will forego the somewhat doubtful mental discipline received from formal studies; he will be contentedly ignorant of things for learning which no better reason than tradition can be assigned. Instead, his education will be obtained from studies that serve real purposes. Its content, spirit and aim will be realistic and genuine, not formal or traditional. Thus, the man educated in the modern sense will be trained to know, to care about and to understand the world he lives in—both the physical world and the social world. A firm grasp of the physical world means the capacity to note and to interpret phenomena; a firm grasp of the social world means a comprehension of and sympathy with current industry, current science and current politics. The extent to which the history and literature of the past are utilized depends, not on what we call the historic value of this or that performance or classic, but on its actual pertinency to genuine need, interest or capacity. In any case, the object in view would be to give children the knowledge they need, and to develop in them the power to handle themselves in our own world. Neither historic nor what are called purely cultural claims would alone be regarded as compelling.

Even the progressive curricula of the present time are far from

accepting the principle above formulated. For, though they include things that serve purposes, their eliminations are altogether too timid. They have occasionally dropped, occasionally curtailed, what experience shows to be either unnecessary or unsuitable. But they retain much of the traditional course of study, and present it in traditional fashion, because an overwhelming case has not—so it is judged—yet been made against it, or because a satisfactory substitute has not been developed and accepted. If, however, the standpoint which I have urged were adopted, the curriculum would contain only what can be shown to serve a purpose. The burden of proof would be on the subject, not on those who stand ready to eliminate it. If the subject serves a purpose, it is eligible to the curriculum; otherwise not. I need not stop at this juncture to show that “serving a purpose,” “useful,” “genuine,” “realistic,” and other descriptive terms are not synonymous with “utilitarian,” “materialistic,” “commercial,” etc., for intellectual and spiritual purposes are genuine and valid, precisely as are physical, physiological, and industrial purposes. That will become clear as we proceed.

It follows from the way in which the child is made and from the constitution and appeal of modern society that objects and phenomena will play a very prominent part in the Modern School. Conventional education, with its grammar-taught languages, its abstract mathematics, its history, etc., is prematurely and excessively bookish. Books and bookish things have indeed their own place and value in a modern scheme of education, as I shall in a moment point out; but the child's concrete experience cannot be abridged without serious damage to his unfolding powers. His intellectual and aesthetic capacities ought to develop on the basis of a first-hand experience, not a second-hand or bookish training. The boy who interrupts his schooling to spend a year on a ranch or in the desert not only hardens his body, but enriches his inner life with impressions that give meaning to the poems he will read, the pictures he will see, the music he will hear in later years. Schools cannot all be located in the mountains, the hills, or the open country; but the modern school must deliberately face the problem of amplifying and enriching the child's sense experience to the end that he may not be restricted to the second-hand impressions derived from the printed page.

It is, however, clear that mere knowledge of phenomena, and mere ability to understand or to produce objects fall short of the ultimate purpose of a liberal education. Such knowledge and such ability indubitably have, as President Eliot's paper pointed out, great value in themselves; and they imply such functioning of the senses as promises a rich fund of observation and experience. But in the end, if the Modern School is to be adequate to the needs of modern life, this concrete training must produce sheer intellectual power. Abstract thinking has perhaps never before played so important a part in life as in this materialistic and scientific world of ours—this world of railroads, automobiles, wireless telegraphy, and international relationships. Our problems involve indeed concrete data and present themselves in concrete forms; but, back of the concrete details, lie difficult and involved intellectual processes. Hence the realistic education we propose must eventuate in intellectual power. We must not only cultivate the child's interests, senses, and practical skill, but we must train him to interpret what he thus gets, to the end that he may not only be able to perceive and to do, but that he may be capable of hard mental work and that he may know in intellectual terms the significance of what he has perceived and done. The Modern School would prove a disappointment, unless greater intellectual power is procurable for its pupils on the basis of a realistic training than they could have procured from an education of any other type.

A MODERN CURRICULUM

Aside from the simply instrumental studies—reading, writing, spelling, and figuring—the curriculum of the modern school would be built out of actual activities in four main fields which I shall designate as science, industry, aesthetics, civics. Let me sketch briefly a realistic treatment of each of these fields.

The work in science would be the central and dominating feature of the school—a departure that is sound from the standpoint of psychology and necessary from the standpoint of our main purpose. Children would begin by getting acquainted with objects—animate and inanimate; they would learn to know trees, plants, animals, hills, streams, rocks, and to care for animals and plants. At the next stage, they would follow the life cycles of plants and animals and study the processes to be observed in inanimate things.

They would also begin experimentation—physical, chemical, and biological. In the upper grades, science would gradually assume more systematic form. On the basis of abundant sense-acquired knowledge and with senses sharpened by constant use, children would be interested in problems and in the theoretic basis on which their solution depends. They will make and understand a fireless cooker, a camera, a wireless telegraph; and they will ultimately deal with phenomena and their relations in the most rigorous scientific form.

The work in science just outlined differs from what is now attempted in both its extent and the point of view. Our efforts at science teaching up to this time have been disappointing for reasons which the above outline avoids: the elementary work has been altogether too incidental; the advanced work has been prematurely abstract; besides, general conditions have been unfavorable. The high school boy who begins a systematic course of physics or chemistry without the previous training above described lacks the basis in experience which is needed to make systematic science genuinely real to him. The usual textbook in physics or chemistry plunges him at once into a world of symbols and definitions as abstract as algebra. Had an adequate realistic treatment preceded, the symbols, when he finally reached them, would be realities. The abyss between sense training and intellectual training would thus be bridged.

Of coördinate importance with the world of science is the world of industry. The child's mind is easily captured for the observation and execution of industrial and commercial processes. The industries growing out of the fundamental needs of food, clothing, and shelter; the industries, occupations, and apparatus involved in transportation and communication—all furnish practically unlimited openings for constructive experiences, for experiments, and for the study of commercial practices. Through such experiences the boy and girl obtain not only a clearer understanding of the social and industrial foundations of life, but also opportunities for expression and achievement in terms natural to adolescence. Nor would this industrial work be simply entertaining or informing, though both entertainment and information of this kind possess in themselves high educational value. Industrial work, properly developed, like the work in science, above discussed, abounds in

problems, the solution of which requires thought and effort. The child thus obtains a knowledge which illuminates his every day life and a genuine discipline involving the thoughtful application of science, mathematics, history, and other studies.

Under the word "aesthetics"—an inappropriate term, I admit—I include literature, language, art, and music—subjects in which the schools are mainly interested from the appreciative side. Perhaps in no other realm would a realistic point of view play greater havoc with established routine. The literature that schools traditionally teach is partly obsolete, partly ill-timed, rarely effective or appealing. Now for most pupils nothing is more wasteful of time or in the long run more damaging to good taste than unwilling and spasmodic attention to selections chosen because history and tradition have stamped them as meritorious or respectable; nothing more futile for them than the make-believe by which such children are forced to worship as "classics" or "standards" what in their hearts they revolt from because it is ill-adjusted to them. The historic importance or inherent greatness of a literary document furnishes the best of reasons why a mature critical student of literature or literary history should attend to it; but neither consideration is conclusive in respect to a child at school. A realistic treatment of literature would take hold of the child's normal and actual interests in romance, adventure, fact or what not, and endeavor to develop them into as effective habits of reading as may be. Translations, adaptations, and originals in the vernacular—old and new—are all equally available. They ought to be used unconventionally and resourcefully, not in order that the child may get—what he will not get anyway—a conspectus of literary development; not in order that he may some day be certificated as having analyzed a few outstanding literary classics; but solely in order that his real interest in books may be carried as far and as high as is for him possible; and in this effort, the methods pursued should be calculated to develop his interest and his taste, not to "train his mind" or to make of him a make-believe literary scholar. There would be less pretentiousness in the realistic than there is in the orthodox teaching of literature, but perhaps in the end the child would really know and care about some of the living masterpieces of the past, and in any event there might exist some connection between the school's teaching and the child's spontaneous out-of-school reading.

during mature life to acquire a foreign tongue, they find the task inordinately difficult and the results too often extremely disappointing. It happens, however, that practical mastery of foreign languages can be attained early in life with comparative ease. A school trying to produce a resourceful modern type of educated man and woman would therefore provide practical training in one or more modern languages.

The fourth main division which I have called civics, includes history, institutions, and current happenings. Much has been written, little done, toward the effective modernization of historical and social studies; so that, though new views of historical values prevail in theory, the schools go on teaching the sort of history they have always taught and in pretty much the same way. "Should a student of the past," writes Professor James Harvey Robinson, "be asked what he regarded as the most original and far-reaching discovery of modern times, he might reply with some assurance that it is our growing realization of the fundamental importance and absorbing interest of common men and common things."¹ Now the conventional treatment of history is political. Meanwhile, as Professor Robinson goes on to say, "It is clear that our interests are changing, and consequently the kind of questions that we ask the past to answer. Our most recent manuals venture to leave out some of the traditional facts least appropriate for an elementary review of the past and endeavor to bring their narrative into relation, here and there, with modern needs and demands. But I think that this process of eliminating the old and substituting the new might be carried much farther; that our best manuals are still crowded with facts that are not worth while bringing to the attention of our boys and girls and that they still omit in large measure those things that are best worth telling."² If this be true, as it appears to be, the realistic approach may make as much difference in history as in literature.

The subject of mathematics offers peculiar difficulty. Perhaps nowhere else is waste through failure so great. Moreover, even when a certain degree of success is attained it happens often that it is quite unintelligent; children mechanically carry out certain operations in algebra, guided by arbitrary signs and models; or they

¹The New History (New York, 1913), p. 132.

²Ibid, p. 137.

learn *memoriter* a series of propositions in geometry. The hollowness of both performances is evident the moment a mathematical problem takes a slightly unfamiliar turn. The child's helplessness exhibits his striking lack of both mathematical knowledge and "mental discipline." It cannot be that this training through failure is really valuable. Finally, a point might even be made on the ground that algebra and geometry as traditionally taught are mainly deductive exercises, whereas practical living involves the constant interplay of observation, induction, and deduction. The artificiality of conventional mathematics therefore raises a suspicion as to its value—even were the subjects mastered.

The truth is that the position of both algebra and geometry in their current form is historical. Now, let us suppose the realistic standard applied—what sort of mathematics would be taught, how much and when? "Mental discipline" as a formal object is not a "realistic" argument, since, as has been already said, it is an unproved assumption. At any rate, it is for those who believe in it to demonstrate how much good it does most children to make a failure in conventional algebra and geometry. Is the elaborate study of mathematical and spatial relations through algebra and geometry a valid undertaking for its own sake? If so, neither the disinclination of the child nor the difficulty of the achievement is a reason for abandoning it. Disinclination and difficulty in that case simply put a problem up to the teachers of the subject: it is for them to find ways of triumphing over both. If, however, these studies do not serve a legitimate and genuine purpose, then the mathematical curriculum must undergo a radical reorganization for the purpose of treating algebra and geometry from the standpoint of the other subjects and other activities which they serve. They would be taught in such form, in such amounts, and at such times as would thus be required. Geometry might be decreased in amount by something like two-thirds or three-fourths¹ and the form of the remaining fourth would be considerably modified; and new types of mathematical instruction and interest might come into general use. It is interesting to observe that doubt as to the soundness and value of our mathematical instruction has recently become so serious

¹"All the facts of geometry that a skilled mechanic or an engineer would ever need could be taught in a few lessons. All the rest is either obvious or is commercially and technically useless."—D. E. Smith, *Teaching of Geometry* (New York, 1911), p. 7.

that the Association of Teachers of Mathematics in New England has suggested "a one-year course in elementary algebra and geometry of a concrete sort, designed so far as possible to test the pupil's qualifications for future mathematical study";¹ and Dr. Snedden has raised the question as to why girls in high schools or as candidates for college should be required to present algebra; he has also urged that a knowledge of algebra is of no importance to men following law, medicine, journalism, or theology.² Professor Breslich, of Chicago, has been attacking the same problem vigorously from a not unrelated point of view.³ Without considering any point settled, it is clear that a Modern School which wiped the slate of mathematics and then subsequently wrote upon it only what was found to serve the real needs of quantitative thought and action might evolve a curriculum in mathematics that we should not recognize.⁴

For convenience sake, the four large fields of activity have been separately discussed. But it must be pointed out that the failure of the traditional school to make cross-connections is an additional unreality. The traditional school teaches composition in the English classes; quantitative work, in the mathematics classes; history, literature, and so on, each in its own division. Efforts are indeed making to overcome this separateness, but they have gone only a little way. The Modern School would from the first undertake the cultivation of contacts and cross-connections. Every exercise would be a spelling lesson; science, industry, and mathematics would be inseparable; science, industry, history, civics, literature, and geography would to some extent utilize the same material. These suggestions are in themselves not new and not wholly untried. What is lacking is a consistent, thoroughgoing, and fearless embodiment. For even the teachers who believe in modern education are so situated that either they cannot act, or they act under limitations that hamper effective effort.

In speaking of the course of study, I have dwelt wholly on content. Unquestionably, however, a curriculum revolutionized in

¹ Preliminary Report on Status of Mathematics in Secondary Schools, December, 1914, p. 11.

² Ibid, p. 4.

³ First Year Mathematics (Chicago, 1906), Author's Preface.

⁴ Since this essay was written, the Mathematical Association of America has undertaken a constructive attack upon this problem.

content, will be presented by methods altered to suit the spirit and aim of the instruction. For children will not be taught merely in order that they may know or be able to do certain things that they do not know and cannot now do, but material will be presented to them in ways that promote their proper development and growth—individually and socially. For education is not only a matter of what people can do, but also of what they are.

In the preceding sketch, I have made no distinction between the sexes. It is just as important for a girl as it is for a boy to be interested in the phenomenal world, to know how to observe, to infer, and to reason, to understand industrial, social, and political developments, to read good books, and to finish school by the age of twenty. Differentiation at one point or another may be suggested by experience. In any event the Modern School, with its strongly realistic emphasis, will undoubtedly not overlook woman's domestic role and family function.

WHAT THE CURRICULUM OMITTS

This necessarily brief and untechnical sketch will perhaps become more definite if I look at the curriculum from the standpoint of omissions. Let us restate our guiding thesis: modern education will include nothing simply because tradition recommends it or because its inutility has not been conclusively established. It proceeds in precisely the opposite way: *it includes nothing for which an affirmative case cannot now be made out.* As has already been intimated, this method of approach would probably result in greatly reducing the time allowed to mathematics, and in decidedly changing the form of what is still retained. If, for example, only so much arithmetic is taught as people actually have occasion to use, the subject will shrink to modest proportions; and if this reduced amount is taught so as to serve real purposes, the teachers of science, industry, and domestic economy will do much of it incidentally. The same policy may be employed in dealing with algebra and geometry. What is taught, when it is taught, and how it is taught will in that event depend altogether on what is needed, when it is needed, and the form in which it is needed.

Precisely the same line of reasoning would be applied to English, history, and literature. For example: There has been a heated discussion for years on the subject of formal grammar, which has been

defended, first, on the ground that it furnishes a valuable mental discipline; second, on the ground that it assists the correct use of language. It is passing strange how many ill-disciplined minds there are among those who have spent years being mentally disciplined now in this subject, now in that. The Modern School would not hesitate to take the risk to mental discipline involved in dropping the study of formal grammar. It would, tentatively, at least, also risk the consequences to correct speech involved in the same step. For such evidence as we possess points to the futility of formal grammar as an aid to correct speaking and writing. The study would be introduced later, only if a real need for it were felt—and only in such amounts and for such periods as this need clearly required.

In respect to history and literature, a Modern School would have the courage not to go through the form of teaching children useless historic facts just because previous generations of children have learned and forgotten them; and also the courage not to read obsolete and uncongenial classics, simply because tradition has made this sort of acquaintance a kind of good form. We might thus produce a generation in large part as ignorant of the name of the Licinian laws as we who have studied them are ignorant of their contents and significance; a generation that did not at school analyze Milton's "Lycidas" or Burke's speech as we did, who then and there vowed life-long hostility to both. But might there not be an offset if the generation in question really cared about the history and politics of, say, modern England or New York City, and read for sheer joy at one time or another and quite regardless of chronological order Homer, Chaucer, Shakespeare, Walter Scott, Stevenson, Kipling, and Masfield?

Neither Latin nor Greek would be contained in the curriculum of the Modern School—not, of course, because their literatures are less important than they are reputed to be, but because their present position in the curriculum rests upon tradition and assumption. For most pupils a positive case can be made out for neither. The literary argument fails, because stumbling and blundering through a few patches of Latin classics do not establish a contact with Latin literature. Nor does present-day teaching result in a practical mastery of Latin useful for other purposes. Mature students who studied Latin through the high school, and perhaps to some extent

in college, find it as a rule difficult or impossible to understand a Latin document encountered in, say, a course in history. If practical mastery is desired, more Latin can be learned in enormously less time by postponing the study until the student needs the language or wants it. At that stage he can learn more Latin in a few months than he would have succeeded in acquiring through four or five years of reluctant effort in youth. Nor can the study be generally recommended on the ground that a knowledge of Latin is essential in securing a vigorous or graceful use of the mother tongue, for this is again unsubstantiated opinion, rejected even by men like Viscount Bryce who prize highly the thorough study of the classics by a minority.¹ Finally, the disciplinary argument fails, because mental discipline is not a real purpose; moreover, it would for many students constitute an argument against rather than for the study of Latin. Instead of getting orderly training by solving difficulties in Latin translation or composition, these pupils guess, fumble, receive surreptitious assistance or accept on faith the injunctions of teacher and grammar. The only discipline that such students get from their classical studies is a discipline in doing things as they should not be done.

EXTRA CURRICULAR ACTIVITIES

So far I have discussed the Modern School only from the standpoint of its course of study. It is time now to mention other implications of the realistic or genuine point of view. If children are to be taught and trained with an eye to the realities of life and existence, the accessible world is the laboratory to be used for that purpose. Let us imagine a Modern School located in New York City; consider for a moment its assets for educational purposes: the harbor, the Metropolitan Museum, the Public Library, the Natural History Museum, the Zoological Garden, the city government, the Weather Bureau, the transportation systems, lectures, concerts, plays, and so on. Other communities may have less, but all have much. As things now are, children living in this rich and tingling environment get for the most part precisely the same education that they would get in the most meager sur-

¹Loc. cit., p. 4—"Let us also discard some weak arguments our predecessors have used, such as that no one can write a good English style without knowing Latin."

roundings. Again, the Modern School is as much interested in the child's body as in his mind. It would therefore provide play facilities, sports, and gymnastics. A study of Gary and of the country day schools, now springing up, should tell us whether the Modern School should or should not seek to provide for the child's entire day. Some of this additional material, we already know pretty well how to organize and use; as for the rest, we shall have to find out.

It is evident that, while in some directions the Modern School would have a fairly clear path, in others it would have to feel its way, and in all its attitude would be distinctly tentative and experimental. To no small extent it would have to create apparatus and paraphernalia as it proceeds. Textbooks, for example, almost invariably conform to tradition; or innovate so slightly as to be, from our point of view, far from satisfactory. The Modern School would thus at the start be at a great disadvantage as compared with established schools that seek gradual improvement through readjustment. But it would have this advantage—that it could really try its experiments with a free hand.

ORGANIZATION OF THE MODERN SCHOOL

President Eliot's paper was called "Changes Needed in Secondary Education." But the habits and capacities needed in a reconstructed secondary school are those whose formation must be begun in the primary school. A modern secondary school cannot be built on a conventional elementary school. If the primary years are lost in the conventional school, the child's native freshness of interest in phenomena has to be recovered in youth—a difficult and uncertain task, which, even if successful, does not make up the loss to the child's fund of knowledge and experience. Nor can the child's singular facility in acquiring a speaking command of other languages be retrieved. The Modern School would therefore have to begin with an elementary school, in which children would be started properly. The relation between elementary and secondary education would be a matter for experimental determination; for whatever may prove to be right, the present break is surely wrong. So, also, the relation of the Modern School to the American college would have to be worked out by experience.

POSSIBLE RESULTS

Would the proposed education educate? Many of the disagreeable features of education with which under existing circumstances children are compelled to wrestle would be eliminated. Would not the training substituted be soft—lacking in vigor, incapable of training the child to work against the grain? Again, is there not danger that a school constituted on the modern basis would be unsympathetic with ideals and hostile to spiritual activity?

Two questions are thus raised, (1) the question of discipline, moral and mental, (2) the question of interest or taste.

There is, I think, no harm to be apprehended on either score. The Modern School would "discipline the mind" in the only way in which most minds can be effectively disciplined—by energizing them through the doing of real tasks. The formal difficulties which the Modern School discards are educationally inferior to the genuine difficulties involved in science, industry, literature, and politics; for formal problems are not apt to evoke prolonged and resourceful effort. It is, indeed, absurd to invent formal difficulties for the professed purpose of discipline, when, within the limits of science, industry, literature, and politics, real problems abound. Method can be best acquired, and stands the best chance of being acquired, if real issues are presented. Are problems any the less problems because a boy attacks them with intelligence and zest? He does not attack them because they are easy, nor does he shrink from them because they are hard. He attacks them, because they challenge his powers. And in this attack he gets what the conventional school so generally fails to give—the energizing of his faculties, and a directive clue as to where he will find a congenial and effective object in life.

A word on the subject of what I have just called the "directive clue." Our college graduates are in large numbers pathetically in the dark as to "what next." Even the elective system has not enabled most of them to find themselves. The reason is clear. A formal education, devoted to "training the mind" and to "culture" does little to connect capacity with opportunity or ambition. The more positive endowments, of course, assert themselves; but the more positive endowments are relatively scarce. In the absence of bent, social pressure determines a youth's career in America

less frequently than in more tightly organized societies. But an education that from the start makes a genuine appeal will disclose, develop and specialize interest. It will, in a word, furnish the individual with a clue.

In this connection it may be fairly asked whether, in the end, it will not turn out that the Modern School practically eschews compulsion. Not at all. But it distinguishes. First of all, the interests of childhood, spontaneous or readily excitable, are of great educational significance: interests in life, objects, adventure, fancy—these the Modern School proposes to utilize and to develop in their natural season. Next, the capacities of childhood—for the learning of languages, for example—of these the Modern School proposes to make timely use with a view to remote contingencies. So far there is little need to speak of compulsion. Compulsion will be employed, however, to accomplish anything that needs to be accomplished by compulsion, provided it can be accomplished by compulsion. Children can and, if necessary, must be compelled to spell and to learn the multiplication table, and anything else that serves a chosen purpose, near or remote; but they cannot be compelled to care about the Faerie Queene, and sheer compulsion applied to that end is wasted. If children cannot through skilful teaching be brought to care about the Faerie Queene, compulsory reading of a book or two is as futile a performance as can be imagined. The Modern School will not therefore eschew compulsion; but compulsion will be employed with intelligence and discrimination.

As to the second question—whether the Modern School would not be spiritually unsympathetic—the answer depends on the relation of genuine interests of a varied character to spiritual activity. It is, of course, obvious that, if the Modern School were limited to industrial or commercial activities, with just so much language, mathematics, and science as the effective prosecution of those activities requires, the higher potentialities of the child would remain undeveloped. But the Modern School proposes nothing of this kind. It undertakes a large and free handling of the phenomenal world, appealing in due course to the observational, the imaginative and the reasoning capacities of the child; and in precisely the same spirit and with equal emphasis, it will utilize art, literature, and music. Keeping always within reach of the child's genuine response should indeed make for, not against the development of spiritual

interests. Are science and such poetry as children can be brought to love more likely or less likely to stir the soul than formal grammar, algebra, or the literature selections made on a conventional basis?

The education of the particular pupils who attend the Modern School might prove to be the least of the services rendered by the School. More important would perhaps be its influence in setting up scientific as against dogmatic educational standards. We go on teaching this or that subject in this or that way for no better reason than that its ineffectiveness or harmfulness has not been established. Medicines were once generally and are still not infrequently prescribed on exactly the same basis. Modern teaching, like modern medicine, should be controlled by positive indications. The schools should teach Latin and algebra, if at all, just as the intelligent physician prescribes digitalis and quinine, because they serve purposes that he knows and can state. It goes without saying that the modern curriculum will not teach itself or succeed as a matter of course; tact, insight, and enthusiasm will continue to be of supreme importance to the teacher.

The inauguration of the experiment discussed in this paper would be at first seriously hampered because of the lack of school paraphernalia adapted to its spirit and purposes. Textbooks, apparatus and methods would have to be worked out—contrived, tentatively employed, remodelled, tried elsewhere, and so on. In the end the implements thus fashioned would be an important factor in assisting the reorganization and reconstruction of other schools—schools that could profit by a demonstration, even though they could not have made the original experiment.

Finally, the Modern School, seeking not only to train a particular group of children, but to influence educational practice, can be made a seminary for the training of teachers, first, its own, then others who will go out into service. The difficulty of recruiting a satisfactory staff to begin with must not be overlooked; for available teachers have been brought up and have taught on traditional lines. On the other hand, the spirit of revolt is rife; and teachers can be found whose efforts have already passed beyond conventional limits.

In education, as in other realms, the inquiring spirit will be the productive spirit. There is an important though not very extensive body of educational literature of philosophical and inspira-

tional character; but there is little of scientific quality. The scientific spirit is just beginning to creep into elementary and secondary schools; and progress is slow, because the conditions are unfavorable. The Modern School should be a laboratory from which would issue scientific studies of all kinds of educational problems—a laboratory, first of all, which would test and evaluate critically the fundamental propositions on which it is itself based, and the results as they are obtained. Too commonly educational innovations have been recommended with excessive enthusiasm and have been promoted on the basis of faith or insight rather than critically examined experience. The Modern School is suggested by an objective study of the conditions which our schools must somehow meet. But its success cannot be regarded as a foregone conclusion. However plausible the arguments in its favor, final judgment cannot be favorable unless the students it turns out are keener, abler, better organized, more resourceful, and more highly cultivated than the products we have ventured to criticize.