VI

SCHOOLING

We left the child whose development threads through this discussion ripe to begin a little schooling at the age of five. We have cleared the ground since then of a great number of things that have got themselves mixed up in an illegitimate way with the idea of school, and we can now take him on again through his "schooling" phases. Let us begin by asking what we require and then look to existing conditions to see how far we may hope to get our requirements. We will assume the foundation described in the fourth paper has been well and truly laid, that we have a number of other similarly prepared children available to form a school, and that we have also teachers of fair average intelligence, conscience, and aptitude. We will ask what can be done with such children and teachers, and then we may ask why it is not universally done.

Even after our clarifying discussion, in which we have shown that schooling is only a part, and by no means the major part, of the educational process, and in which we have distinguished and separated the home element in the boarding-school from the schooling proper, there still remains something more than a simple theme in schooling. After all these eliminations we remain with a mixed function and mixed traditions, and it is necessary now to look a little into the nature of

this mixture.

The modern school is not a thing that has evolved from a simple germ, by a mere process of expansion. It is the coalescence of several things. In different countries and periods you will find schools taking over this function and throwing out that, and changing not only methods but professions and aims in the most remarkable manner. What has either been teachable or has seemed teachable in human development has played a part in some curriculum or other. Beyond the fact that there is class instruction and an initial stage in which the pupil learns to read and write, there is barely anything in common. But that initial stage is to be noted; it is the thing the Hebrew schoolboy, the Tamil schoolboy, the Chinese schoolboy, and the American schoolboy have in common. So much, at any rate, of the school appears wherever there is a written language, and its presence marks a stage in the civilizing process. As I have already pointed out in my book "Anticipations," the presence of a reading and writing class of society and the existence of an organized nation (as distinguished from a tribe) appear together. When tribes coalesce into nations, schools appear. This first and most universal function of the school is to initiate a smaller or greater proportion of the population into the ampler world, the more efficient methods, of the reading and writing man. And with the disappearance of the slave and the mere labourer from the modern conception of what is necessary in the state, there has now come about an extension of this initiation to the whole of our English-speaking population. And in addition to reading and writing the vernacular, there is also almost

universally in schools instruction in counting, and wherever there is a coinage, in the values and simpler computation of coins.

In addition to the vernacular teaching, one finds in the schools--at any rate the schools for males--over a large part of the world, a second element, which is always the language of what either is or has been a higher and usually a dominant civilization. Typically, there is a low or imitative vernacular literature or no literature at all, and this second language is the key to all that literature involves--general views, general ideas, science, poetic suggestion and association. Through this language the vernacular citizen escapes from his parochial and national limitations to a wide commonweal of thought. Such was Greek at one time to the Roman, such was Latin to the Bohemian, the German, the Englishman or the Spaniard of the middle ages, and such it is to-day to the Roman Catholic priest; such is Arabic to the Malay, written Chinese to the Cantonese or the Corean, and English to the Zulu or the Hindoo. In Germany and France, to a lesser degree in Great Britain, and to a still lesser degree in the United States, we find, however, an anomalous condition of things. In each of these countries civilization has long since passed into an unprecedented phase, and each of these countries has long since developed a great living mass of literature in which its new problems are, at any rate, approached. There is scarcely a work left in Latin or Greek that has not been translated into and assimilated and more or less completely superseded by English, French, and German works; but the schoolmaster, heedless of these things, still arrests the pupil at

the old portal, fumbles with the keys, and partially opens the door into a ransacked treasure-chamber. The language of literature and of civilized ideas is, for the English-speaking world to-day, English--not the weak, spoken dialect of each class and locality, but the rich and splendid language in which and with which our literature and philosophy grow. That, however, is by the way. Our point at present is that the exhaustive teaching of a language so that it may serve as a key to culture is a second function in the school.

We find in a broad survey of schools in general that there has also been a disposition to develop a special training in thought and expression either in the mother tongue (as in the Roman schools of Latin oratory), or in the culture tongue (as in Roman schools of Greek oratory), and we find the same element in the mediaeval trivium. Quintilian's conception of education, the reader will remember, was oratory. This aspect of school work was the traditional and logical development of the culture language-teaching. But as in Europe the culture language has ceased to be really a culture language but merely a reasonless survival, and its teaching has degenerated more and more into elaborate formalities supposed to have in some mystical way "high educational value," and for the most part conducted by men unable either to write or speak the culture language with any freedom or vigour, this crown of cultivated expression has become more and more inaccessible. It is too manifestly stupid--even for our public schoolmasters--to think of carrying the "classical grind" to that pitch, and, in fact, they carry no part of the education to that pitch.

There is no deliberate and professed training at all in logical thought--except for the use of Euclid's Elements to that end--nor in expression in any language at all, in the great mass of modern schools. This is a very notable point about the schools of the present period.

But, on the other hand, the schools of the modern period have developed masses of instruction that were not to be found in the schools of the past. The school has reached downward and taken over, systematized, and on the whole, I think, improved that preliminary training of the senses and the observation that was once left to the spontaneous activity of the child among its playmates and at home. The kindergarten department of a school is a thing added to the old conception of schooling, a conversion of the all too ample school hours to complete and rectify the work of the home, to make sure of the foundation of sense impressions and elementary capabilities upon which the edifice of schooling is to rise. In America it has grown, as a wild flower transferred to the unaccustomed richness of garden soil will sometimes do, rankly and in relation to the more essential schooling, aggressively, and become a highly vigorous and picturesque weed. One must bear in mind that Froebel's original thought was rather of the mother than of the schoolmistress, a fact the kindergarten invaders of the school find it convenient to forget. I believe we shall be carrying out his intentions as well as the manifest dictates of common sense if we do all in our power by means of simply and clearly written books for nurses and mothers to shift very much of the kindergarten back to home and playroom and out of the school altogether. Correlated with this

development, there has been a very great growth in our schools of what is called manual training and of the teaching of drawing. Neither of these subjects entered into the school idea of any former period, so far as my not very extensive knowledge of educational history goes.

Modern, too, is the development of efficient mathematical teaching; so modern that for too many schools it is still a thing of tomorrow. The arithmetic (without Arabic numerals, be it remembered) and the geometry of the mediaeval quadrivium were astonishingly clumsy and ineffectual instruments in comparison with the apparatus of modern mathematical method. And while the mathematical subjects of the quadrivium were taught as science and for their own sakes, the new mathematics is a sort of supplement to language, affording a means of thought about form and quantity and a means of expression, more exact, compact, and ready than ordinary language. The great body of physical science, a great deal of the essential fact of financial science, and endless social and political problems are only accessible and only thinkable to those who have had a sound training in mathematical analysis, and the time may not be very remote when it will be understood that for complete initiation as an efficient citizen of one of the new great complex world-wide states that are now developing, it is as necessary to be able to compute, to think in averages and maxima and minima, as it is now to be able to read and write. This development of mathematical teaching is only another aspect of the necessity that is bringing the teaching of drawing into schools, the necessity that is so widely, if not always very intelligently perceived, of clearheadedness about

quantity, relative quantity, and form, that our highly mechanical, widely extended, and still rapidly extending environments involve.

Arithmetic and geometry were taught in the mediaeval school as sciences, in addition the quadrivium involved the science of astronomy, and now that the necessary fertilizing inundation of our general education by the classical languages and their literatures subsides, science of a new sort reappears in our schools. I must confess that a lot of the science teaching that appears in schools nowadays impresses me as being a very undesirable encumbrance of the curriculum. The schoolman's science came after the training in language and expression, late in the educational scheme, and it aimed, it pretended--whatever its final effect was--to strengthen and enlarge the mind by a noble and spacious sort of knowledge. But the science of the modern school pretends merely to be a teaching of useful knowledge; the vistas, the tremendous implications of modern science are conscientiously disregarded, and it is in effect too often no more than a diversion of school energies to the acquisition of imperfectly analyzed misstatements about entrails, elements, and electricity, with a view--a quite unjustifiable view--to immediate profitable hygienic and commercial application. Whether there is any educational value in the school-teaching of science we may discuss later. For the present we may note it simply as a revived and developing element.

On the other hand, while these things expand in the modern school, there are declining elements, once in older schemes of scholastic work

much more evident. In the culture of the mediaeval knight, for example, and of the eighteenth-century young lady, elegant accomplishments, taught disconnected from the general educational scheme and for themselves, played a large part. The eighteenth-century young lady was taught dancing, deportment, several instruments of music, how to pretend to sketch, how to pretend to know Italian, and so on. The dancing still survives--a comical mitigation of high school austerities--and there is also a considerable interruption of school work achieved by the music-master. If there is one thing that I would say with certainty has no business whatever in schools, it is piano-teaching. The elementary justification of the school is its organization for class-teaching and work in unison, and there is probably no subject of instruction that requires individual tuition quite so imperatively as piano-playing; there is no subject so disadvantageously introduced where children are gathered together. But to every preparatory and girls' school in England--I do not know if the same thing happens in America--the music-master comes once or twice a week, and with a fine disregard of the elementary necessities of teaching, children are called one by one, out of whatever class they happen to be attending, to have their music-lesson. Either the whole of the rest of the class must mark time at some unnecessary exercise until the missing member returns, or one child must miss some stage, some explanation that will involve a weakness, a lameness for the rest of the course of instruction. Not only is the actual music-lesson a nuisance in this way, but all day the school air is loaded with the oppressive tinkling of racked and rackety pianos. Nothing, I think,

could be more indicative of the real value the English school-proprietor sets on school-teaching than this easy admission of the music-master to hack and riddle the curriculum into rags. [Footnote 1: Piano playing as an accomplishment is a nuisance and encumbrance to the school course and a specialization that surely lies within the private Home province. To learn to play the piano properly demands such an amount of time and toil that I do not see how we can possibly include it in the educational scheme of the honourable citizens of the coming world state. To half learn it, to half learn anything, is a training in failure. But it is probable that a different sort of music teaching altogether--a teaching that would aim, not at instrumentalization, but at intelligent appreciation--might find a place in a complete educational scheme. The general ignorance that pervades, and in part inspires these papers, does, in the matter of music, become special, profound, and distinguished. It seems to me, however, that what the cultivated man or woman requires is the ability to read a score intelligently rather than to play it--to distinguish the threads, the values, of a musical composition, to have a quickened ear rather than a disciplined hand. I owe to my friend, Mr. Graham Wallas, the suggestion that the piano is altogether too exacting an instrument to use as the practical vehicle for such instruction, and that something simpler and cheaper--after the fashion of the old spinet--is required. Possibly some day a teacher of genius will devise and embody in a book a course of class lessons, sustained by simple practice and written work, that would attain this end. But, indeed, after all is said and done, music is the most detached and the purest of arts, the most accessory of

attainments.] Apart from the piano work, the special teaching of elegant accomplishments seems just at present on the wane. And on the whole I think what one might call useful or catchpenny accomplishments are also passing their zenith--shorthand lessons, book-keeping lessons, and such-like impostures upon parental credulity.

There is, however, a thing that was once done in schools as a convenient accomplishment, and which has--with that increase in communication which is the salient material fact of the nineteenth century--developed in Western Europe to the dimensions of a political necessity, and that is the teaching of one or more modern foreign languages. The language-teaching of all previous periods has been done with a view to culture, artistic, as in the case of Elizabethan Italian, or intellectual as with English Latin. But the language-teaching of to-day is deliberately, almost conscientiously, not for culture. It would, I am sure, be a very painful and shocking thought indeed to an English parent to think that French was taught in school with a view to reading French books. It is taught as a vulgar necessity for purposes of vulgar communication. The stirring together of the populations that is going on, the fashion and facilities for travel, the production of the radii from the trading foci, are rapidly making a commonplace knowledge of French, German, and Italian a necessity to the merchant and tradesman, and the ever more extensive travelling class. So that so far as Europe goes, one may very well regard this modern modern-language teaching as--with the modern mathematics--an extension of the trivium, of the apparatus, that is, of thought and

expression. [Footnote: In the United States there is less sense of urgency about modern languages, but sooner or later the American may wake up to the need of Spanish in his educational schemes.] It is an extension and a very doubtful improvement. It is a modern necessity, a rather irksome necessity, of little or no essential educational value, an unavoidable duty the school will have to perform. [Footnote: In one way the foreign language may be made educationally very useful, and that is as an exercise in writing translations into good English.]

There are two subjects in the modern English school that stand by themselves and in contrast with anything one finds in the records of ancient and oriental schools, as a very integral part of what is regarded as our elementary general education. They are of very doubtful value in training the mind, and most of the matter taught is totally forgotten in adult life. These are history and geography. These two subjects constitute, with English grammar and arithmetic, the four obligatory subjects for the very lowest grade of the London College of Preceptors' examinations, for example. The examination papers of this body reveal the history as an affair of dated events, a record of certain wars and battles, and legislative and social matters quite beyond the scope of a child's experience and imagination. Scholastic history ends at 1700 or 1800, always long before it throws the faintest light upon modern political or social conditions. The geography is, for the most part, topography, with a smattering of quantitative facts, heights of mountains, for example, populations of countries, and lists of obsolete manufactures and obsolete trade conditions. Any one who

will take the trouble to run through the text-books of these subjects gathered together in the library of the London Teachers' Guild, will find that the history is generally taught without maps, pictures, descriptive passages, or anything to raise it above the level of an arid misuse of memory; and the highest levels to which ordinary school geography has attained are to be found in the little books of the late Professor Meiklejohn. These two subjects are essentially "information" subjects. They differ in prestige rather than in educational quality from school chemistry and natural history, and their development marks the beginning of that great accumulation of mere knowledge which is so distinctive of this present civilization.

There are, no doubt, many minor subjects, but this revision will at least serve to indicate the scope and chief varieties of school work. Out of some such miscellany it is that in most cases the student passes to specialization, to a different and narrower process which aims at a specific end, to the course of the College. In some cases this specialized course may be correlated with a real and present practice, as in the case of the musical, medical, and legal faculties of our universities; it may be correlated with obsolete needs and practices and regardless of modern requirements, as in the case of the student of divinity who takes his orders and comes into a world full of the ironical silences that follow great controversies, nakedly ignorant of geology, biology, psychology, and modern biblical criticism; or it may have no definite relation to special needs, and it may profess to be an upward prolongation of schooling towards a sort of general wisdom and

culture, as in the case of the British "Arts" degrees. The ordinary Oxford, Cambridge, or London B.A. has a useless smattering of Greek, he cannot read Latin with any comfort, much less write or speak that tongue; he knows a few unedifying facts round and about the classical literature, he cannot speak or read French with any comfort; he has an imperfect knowledge of the English language, insufficient to write it clearly, and none of German, he has a queer, old-fashioned, and quite useless knowledge of certain rudimentary sections of mathematics, and an odd little bite out of history. He knows practically nothing of the world of thought embodied in English literature, and absolutely nothing of contemporary thought; he is totally ignorant of modern political or social science, and if he knows anything at all about evolutionary science and heredity it is probably matter picked up in a casual way from the magazines. Art is a sealed book to him. Still, the inapplicability of his higher education to any professional or practical need in the world is sufficiently obvious, it seems, to justify the claim that it has put him on a footing of thought and culture above the level of a shopman. It is either that or nothing. And without deciding between these alternatives, we may note here for our present purpose, that the conception of a general upward prolongation of schooling beyond adolescence, as distinguished from a specific upward prolongation into professional training, is necessary to the complete presentation of the school and college scheme in the modern state.

There has always been a tendency to utilize the gathering together of

children in schools for purposes irrelevant to schooling proper, but of some real or fancied benefit. Wherever there is a priestly religion, the lower type of religious fanatic will always look to the schools as a means of doctrinal dissemination; will always be seeking to replace efficiency by orthodoxy upon staff and management; and, with an unconquerable, uncompromising persistency, will seek perpetually either to misconduct or undermine; and the struggle to get him out and keep him out of the school, and to hold the school against him, will be one of the most necessary and thankless of New Republican duties. I have, however, already adduced reasons that I think should appeal to every religious mind, for the exclusion of religious teaching from school work. The school gathering also affords opportunity for training in simple unifying political conceptions; the salutation of the flag, for example, or of the idealized effigies of King and Queen. The quality of these conceptions we shall discuss later. The school also gives scope for physical training and athletic exercises that are, under the crowded conditions of a modern town, almost impossible except by its intervention. And it would be the cheapest and easiest way of raising the military efficiency of a country, and an excellent thing for the moral tone and public order of a people, to impose upon the school gathering half an hour a day of vigorous military drill. The school, too, might very easily be linked more closely than it is at present with the public library, and made a means of book distribution; and its corridors may easily be utilized as a loan picture gallery, in which good reproductions of fine pictures might bring the silent influence of the artist mind to bear. But all these things are secondary

applications of the school gathering; at their best they are not conducted by the school-teacher at all, and I remark upon them here merely to avoid any confusion their omission might occasion.

Now if we dip into this miscellany of things that figure and have figured in schools, if we turn them over and look at them, and seek to generalize about them, we shall begin to see that the most persistently present, and the living reality of it all, is this: to expand, to add to and organize and supplement that apparatus of understanding and expression the savage possesses in colloquial speech. The pressing business of the school is to widen the range of intercourse. [Footnote: This way of putting it may jar a little upon the more or less explicit preconceptions of many readers, who are in reality in harmony with the tone of thought of this paper. They will have decided that the school work is to "train the mind," to "teach the pupil to think," or upon some similar phrase. But I venture to think that most of these phrases are at once too wide and too narrow. They are too wide because they ignore the spontaneous activity of the child and the extra-scholastic forces of mind-training, and they are too narrow because they ignore the fact that we do not progress far with our thoughts unless we throw them out into objective existence by means of words, diagrams, models, trial essays. Even if we do not talk to others we must, silently or vocally or visibly, talk to ourselves at least to get on. To acquire the means of intercourse is to learn to think, so far as learning goes in the matter.] It is only secondarily--so far as schooling goes--or, at any rate, subsequently, that the idea of

shaping, or, at least, helping to shape, the expanded natural man into a citizen, comes in. It is only as a subordinate necessity that the school is a vehicle for the inculcation of facts. The facts come into the school not for their own sake, but in relation to intercourse. It is only upon a common foundation of general knowledge that the initiated citizens of an educated community will be able to communicate freely together. With the net of this phrase, "widening the range of intercourse," I think it is possible to gather together all that is essential in the deliberate purpose of schooling. Nothing that remains outside is of sufficient magnitude to be of any importance in the small-scale sketch of human development we are now making:--

If we take this and hold to it as a guide, and explore a scheme of school work, in the direction it takes us, we shall find it shaping itself (for an English-speaking citizen) something after this fashion: --

A. Direct means of understanding and expression.

1. Reading.
2. Writing.
3. Pronouncing English correctly.

Which studies will expand into--

4. A thorough study of English as a culture language, its origin, development, and vocabulary, and

5. A sound training in English prose composition and versification.

And in addition--

6. Just as much of mathematics as one can get in.

7. Drawing and painting, not as "art," but to train and develop the appreciation of form and colour, and as a collateral means of expression.

8. Music [perhaps] to the same end.

B. To speak the ordinary speech, read with fair intelligence, and write in a passably intelligible manner the foreign language or languages, the social, political, and intellectual necessities of the time require.

And C. A division arising out of A and expanding in the later stages of the school course to continue and replace A: the acquisition of the knowledge (and of the art of acquiring further knowledge from books and facts) necessary to participate in contemporary thought and life.

Now this project is at once more modest in form and more ambitious in substance than almost any school scheme or prospectus the reader is likely to encounter. Let us (on the assumption of our opening

paragraph) inquire what is needed to carry it into execution. So far as 1 and 2 in this table go, we have to recognize that since the development of elementary schools in England introduced a spirit of endeavour into teaching, there has been a steady progress in the art of education. Reading and writing are taught somehow or other to most people nowadays, they are frequently taught quickly and well, especially well, I think, in view of the raw material, in many urban Board Schools in England, and there is nothing to do here but to inquire if anything can be done to make this teaching, which is so exceptional in attaining its goal, still quicker and easier, and in bringing the average up to the level of the present best. We have already suggested as the work of an imaginary English Language Society, how much might be done in providing everywhere, cheaply and unavoidably, the best possible reading-books, and it is manifest that the standard of copy-books for writing might also be pressed upward by similar methods. In addition, we have to consider--what is to me a most uncongenial subject--the possible rationalization of English spelling. I will frankly confess I know English as much by sight as by sound, and that any extensive or striking alteration, indeed that almost any alteration, in the printed appearance of English, worries me extremely. Even such little things as Mr. Bernard Shaw's weakness for printing "I've" as "Ive," and the American "favor," "thro," and "catalog" catch at my attention as it travels along the lane of meaning, like trailing briars. But I have to admit this habit of the old spelling, which I am sure most people over four-and-twenty share with me, will trouble neither me nor any one else who reads books now, in the year 1990. I

have to admit that the thing is an accident of my circumstances. I have learnt to read and write in a certain way, and I am concerned with the thing said and not with the vehicle, and so it is that it distresses me when the medium behaves in an unusual way and distracts my attention from the thing it conveys. But if it is true--and I think it must be true--that the extremely arbitrary spelling of English--and more especially of the more familiar English words--greatly increases the trouble of learning to read and write, I do not think the mental comfort of one or two generations of grown-up people must be allowed to stand in the way of a permanent economy in the educational process. I believe even that such a reader as I might come to be very easy in the new way. But whatever is done must be done widely, simultaneously, all over the English-speaking community, and after the fullest consideration. The local "spelling reform" of a few half-educated faddists here and there, helps not at all, is a mere nuisance. This is a thing to be worked out in a scientific way by the students of phonetics; they must have a complete alphabet settled for good, a dictionary ready, reading-books well tested, the whole system polished and near perfection before the thing passes out of the specialists' hands. The really practical spelling-reformer will devote his guineas to endowing chairs of phonetics and supporting publication in phonetic science, and his time to study and open-minded discussion. Such organisations as the Association Phonétique Internationale, may be instanced. Systems concocted in a hurry, in a half-commercial or wholly commercial and in a wholly presumptuous manner, pushed like religious panaceas and advertised like soap--Pitman's System, Barnum's

System, Quackbosh the Gifted Postman's System, and all that sort of thing--do nothing but vulgarize, discredit, and retard this work.

Before a system of phonetic spelling can be established, it is advisable that a standard pronunciation of English should exist. With that question also these papers have already dealt. But for the sake of emphasis I would repeat here the astonishment that has grown upon me as I have given my mind to these things, that, save for local exceptions, there should be no pressure even upon those who desire to become teachers in our schools or preachers in our pulpits, to attain a qualifying minimum of correct pronunciation.

Now directly we pass beyond these first three elementary matters, reading, writing, and pronunciation, and come to the fourth and fifth items of our scheme, to the complete mastery of English that is, we come upon a difficulty that is all too completely disregarded in educational discussions--always by those who have had no real scholastic experience, and often by those who ought to know better. It is extremely easy for a political speaker or a city magnate or a military reformer or an irresponsible writer, to proclaim that the schoolmaster must mend his ways forthwith, give up this pointless Latin of his, and teach his pupils the English language "thoroughly"--with much emphasis on the "thoroughly," but it is quite another thing for the schoolmaster to obey our magnificent directions. For the plain, simple, insurmountable fact is this, that no one knows how to teach English as in our vague way we critics imagine it taught; that no

working schoolmaster alive can possibly give the thing the concentrated attention, the experimental years necessary for its development, that it is worth nobody's while, and that (except in a vein of exalted self-sacrifice) it will probably not be worth any one's while to do so for many years unless some New Republicans conspire to make it so. The teaching of English requires its Sturm, its energetic modern renascence schoolmasters, its set of school books, its branches and grades, before it can become a discipline, even to compare with the only subject taught with any shadow of orderly progressive thoroughness in secondary schools, namely, Latin. At present our method in English is a foolish caricature of the Latin method; we spend a certain amount of time teaching children classificatory bosh about the eight sorts of Nominative Case, a certain amount of time teaching them the "derivation" of words they do not understand, glance shyly at Anglo-Saxon and at Grimm's Law, indulge in a specific reminiscence of the Latin method called parsing, supplement with a more modern development called the analysis of sentences, give a course of exercises in paraphrasing (for the most part the conversion of good English into bad), and wind up with lessons in "Composition" that must be seen to be believed. Essays are produced, and the teacher noses blindly through the product for false concords, prepositions at the end of sentences, and, if a person of peculiarly fine literary quality, for the word "reliable" and the split infinitive. These various exercises are so little parts of an articulate whole that they may be taken in almost any order and any relative quantity. And in the result, if some pupil should, by a happy knack of apprehension, win through this confusion to

a sense of literary quality, to the enterprise of even trying to write, the thing is so rare and wonderful that almost inevitably he or she, in a fine outburst of discovered genius, takes to the literary life. For the rest, they will understand nothing but the flattest prose; they will be deaf to everything but the crudest meanings; they will be the easy victims of the boom, and terribly shy of a pen. They will revere the dead Great and respect the new Academic, read the living quack, miss and neglect the living promise, and become just a fresh volume of that atmosphere of azote, in which our literature stifles.

Now the schoolmaster is not to blame for this any more than he is to blame for sticking to Latin. It is no more possible for schoolmasters and schoolmistresses, whose lives are encumbered with a voluminous mass of low-grade mental toil and worries and reasonable and unreasonable responsibilities, to find the energy and mental freedom necessary to make any vital changes in the methods that text-books, traditions, and examinations force upon them, than it is for a general medical practitioner to invent and make out of the native ore the steel implements some operation of frequent occurrence in his practice may demand. If they are made, and accessible by purchase and not too expensive, he will get them; if they are not he will have to fumble along with the next best thing; and if nothing that is any good can be got, then there is nothing for it, though he be the noblest character, the finest intelligence that ever lived behind a brass plate, but either to shirk that operation altogether or to run the chance of making a disastrous mess of it.

Scolding the schoolmaster, gibing at the schoolmaster, guying, afflicting and exasperating the schoolmaster in every conceivable way, is an amusement so entirely congenial to my temperament that I do not for one moment propose to abandon it. It is a devil I have, and I admit it. He insults schoolmasters and bishops in particular, and I do not cast him out, but at the same time I would most earnestly insist that all that sort of thing does nothing whatever to advance education, that it is a mere outbreak of personal grace-notes so far as this discussion goes. The real practical needs in the matter are a properly worked-out method, a proper set of school books, and then a progressive alteration of examinations in English, to render that method and that set of school books imperative. These are needs the schoolmaster and schoolmistress can do amazingly little to satisfy. Of course, when these things are ready and the pressure to enforce them begins to tell on the schools, schoolmasters and schoolmistresses, having that almost instinctive dread of any sort of change that all hard-worked and rather worried people acquire, will obstruct and have to be reckoned with, but that is a detail in the struggle and not a question of general objective. And to satisfy those real practical needs, what is wanted is in the first place an organizer, a reasonable sum of money, say ten thousand pounds for ten years, and access for experimental purposes to a variety of schools. This organizer would set himself to secure the whole time and energy and interest of a dozen or so of good men; they would include several expert teachers, a clear-headed pedagogic expert or so, a keen psychologist perhaps with a penetrating mind--for

example, one might try and kidnap Professor William James in his next Sabbatical year--one or two industrious young students, a literary critic perhaps, a philologist, a grammarian, and set them all, according to their several gifts and faculties, towards this end. At the end of the first year this organizer would print and publish for the derision of the world in general and the bitter attacks of the men he had omitted from the enterprise in particular, for review in the newspapers and for trial in enterprising schools, a "course" in the English language and composition. His team of collaborators, revised perhaps, probably weeded by a quarrel or so and supplemented by the ablest of the hostile critics, would then, working with all their time and energy, revise the course for the second year. And you would repeat the process for ten years. In the end at the cost of £100,000--really a quite trivial sum for the object in view--there would exist the scheme, the method, the primers and text-books, the School Dictionary, the examination syllabus, and all that is now needed for the proper teaching of English. You would have, moreover, in the copyrights of the course an asset that might go far to recoup those who financed the enterprise.

It is precisely this difficulty about text-books and a general scheme that is the real obstacle to any material improvement in our mathematical teaching. Professor Perry, in his opening address to the Engineering Section of the British Association at Belfast, expressed an opinion that the average boy of fifteen might be got to the infinitesimal calculus. As a matter of fact the average English boy of

fifteen has only just looked at elementary algebra. But every one who knows anything of educational science knows, that by the simple expedient of throwing overboard all that non-educational, mind-sickening and complex rubbish about money and weights and measures, practice, interest, "rule of three," and all the rest of the solemn clap-trap invented by the masters of the old Academy for Young Gentlemen to fool the foolish predecessors of those who clamour for commercial education to-day, and by setting aside the pretence in teaching geometry, that algebraic formulae and the decimal notation are not yet invented, little boys of nine may be got to apply quadratic equations to problems, plot endless problems upon squared paper, and master and apply the geometry covered by the earlier books of Euclid with the utmost ease. But to do this with a class of boys at present demands so much special thought, so much private planning, so much sheer toil on the part of the teacher, that it becomes practically impossible. The teacher must arrange the whole course himself, invent his examples, or hunt them laboriously through a dozen books; he must be not only teacher, but text-book. I know of no School Arithmetic which does not groan under a weight of sham practical work, and that does not, with an absurd priggishness, exclude the use of algebraic symbols. Except for one little volume, I know of no sane book which deals with arithmetic and elementary algebra under one cover or gives any helpful exercises or examples in squared paper calculations. Such books, I am told, exist in the seclusion of publishers' stock-rooms, but if I, enjoying as I do much more leisure and opportunity of inquiry than the average mathematical master, cannot get at them, how can we

expect him to do so? And the thing to do now is obviously to discover or create these books, and force them kindly but firmly into the teachers' hands.

The problem is much simpler in the case of mathematical teaching than in the case of English, because the educational theory and method have been more thoroughly discussed. There is no need for the ten years of experiment and trial I have suggested for the organization of English teaching. The mathematical reformer may begin now at a point the English language reformer will not reach for some years. Suppose now a suitably authenticated committee were to work out--on the basis of Professor Perry's syllabus perhaps--a syllabus of school mathematics, and then make a thorough review of all the mathematical textbooks on sale throughout the English-speaking world, admitting some perhaps as of real permanent value for teaching of the new type, provisionally recognizing others as endurable, but with clear recommendations for their revision and improvement, and condemning the others specifically by name. Let them make it clear that this syllabus and report will be respected by all public examining bodies; let them spend a hundred pounds or so in the intelligent distribution of their report, and the scholastic profession will not be long before it is equipped with the recommended books. Meanwhile, the English and American scholastic publishers will become extremely active, the warned books will be revised, and new books will be written in competition for the enormous prize of the committee's final approval, an activity that a second review, after an interval of five or six years, will recognize

and reward.

Such measures as these will be worth reams of essays in educational papers and Parents' Reviews, worth thousands of inspiring and suggestive lectures at pedagogic conferences. If, indeed, such essays and such lectures do any good at all. The more one looks into scholastic affairs the more one is struck not only by the futility but the positive mischievousness of much of what passes for educational liberalism. The schoolmaster is criticised vehemently for teaching the one or two poor useless subjects he can in a sort of way teach, and practically nothing is done to help or equip him to teach anything else. By reason of this uproar, the world is full now of anxious muddled parents, their poor brains buzzing with echoes of Froebel, Tolstoy, Herbert Spencer, Ruskin, Herbart, Colonel Parker, Mr. Harris, Matthew Arnold, and the Morning Post, trying to find something better. They know nothing of what is right, they only know very, very clearly that the ordinary school is extremely wrong. They are quite clear they don't want "cram" (though they haven't the remotest idea what cram is), and they have a pretty general persuasion that failure at examination is a good test of a sound education. And in response to their bleating demand there grows a fine crop of Quack Schools; schools organized on lines of fantastic extravagance, in which bee-keeping takes the place of Latin, and gardening supersedes mathematics, in which boys play tennis naked to be cured of False Shame, and the numerical exercises called bookkeeping and commercial correspondence are taught to the sons of parents (who can pay a hundred guineas a

year), as Commercial Science. The subjects of study in these schools come and go like the ravings of a disordered mind; "Greek History" (in an hour or so a week for a term) is followed by "Italian Literature," and this gives place to the production of a Shakesperian play that ultimately overpowers and disorganizes the whole curriculum. Ethical lessons and the school pulpit flourish, of course. A triennial walk to a chalk-pit is Field Geology, and vague half-holiday wanderings are Botany Rambles. "Art" of the copper punching variety replaces any decent attempt to draw, and an extreme expressiveness in music compensates for an almost deliberate slovenliness of technique. Even the ladies' seminaries of the Georgian days could scarcely have produced a parallel to the miscellaneous incapacity of the victim of these "modern" schools, and it becomes daily more necessary for those who have the interests of education at heart to disavow with the most unmistakable emphasis these catch-parent impostures.

With the other subjects under the headings of A and B, it is not necessary to deal at any length here. Drawing begins at home, and a child should have begun to sketch freely before the formal schooling commences. It is the business of the school to teach drawing and not to teach "art," which, indeed, is always an individual and spontaneous thing, and it need only concern itself directly with those aspects of drawing that require direction. Of course, an hour set aside from the school time in which boys or girls may do whatever they please with paper, ink, pens, pencils, compasses, and water-colour would be a most excellent and profitable thing, but that scarcely counts (except

in the Quack Schools) as teaching. As a matter of fact, teaching absolutely spoils all that sort of thing. A course in model drawing and in perspective, however, is really a training in seeing things, it demands rigorous instruction and it must be the backbone of school drawing, and, in addition, studies may be made from flowers that would not be made without direction: topography (and much else) may be learnt by copying good explicit maps; chronology (to supplement the child's private reading of history) by the construction of time charts; and much history also by drawing and colouring historical maps. With geometrical drawing one passes insensibly into mathematics. And so much has been done not only to revolutionize the teaching of modern languages, but also to popularize the results, that I may content myself with a mere mention of the names of Rippmann, S. Alge, Hölzel, and Gouin as typical of the new ways.

There remains the question of C, the amount of Information that is to take a place in schooling. Now there is one "subject" that it would be convenient to include, were it only for the sake of the mass of exercise and illustration it supplies to the mathematical course, and that is the science of Physics. In addition, the science of physics, since it culminates in a clear understanding and use of the terminology of the aspects of energy and a clear sense of adequate causation, is fundamentally necessary to modern thought. Practical work is, no doubt, required for the proper understanding of physical science, and so far it must enter into schooling, but it may be pointed out here that in many cases the educational faddist is overdoing the

manual side of science study to a ridiculous extent. Things have altered very much at the Royal College of Science, no doubt, since my student days, but fifteen years ago the courses in elementary physics and in elementary geology were quite childishly silly in this respect. Both these courses seemed to have been inspired by that eminent educationist, Mr. Squeers, and the sequel to spelling "window" was always to "go and clean one." The science in each course in those days could have been acquired just as well in a fortnight as in half a year. One muddled away three or four days etching a millimetre scale with hydrofluoric acid on glass--to no earthly end that I could discover--and a week or so in making a needless barometer. In the course in geology, days and days were spent in drawing ideal crystalline forms and colouring them in water-colours, apparently in order to get a totally false idea of a crystal, and weeks in the patient copying of microscopic rock sections in water-colours. Effectual measures of police were taken to prevent the flight of the intelligent student from these tiresome duties. The mischief done in this way is very great. It deadens the average students and exasperates and maddens the eager ones. I am inclined to think that a very considerable proportion of what passes as "practical" science work, for which costly laboratories are built and expensive benches fitted, consists of very similar solemnities, and it cannot be too strongly urged that "practical" work that does not illuminate is mere waste of the student's time.

This physics course would cover an experimental quantitative treatment of the electric current, it would glance in an explanatory way at many

of the phenomena of physical geography, and it would be correlated with a study of the general principles of chemistry. A detailed knowledge of chemical compounds is not a part of general education, it keeps better in reference books than in the non-specialized head, and it is only the broad conceptions of analysis and combination, and of the relation of energy to chemical changes, that have to be attained. Beyond this, and the application of map drawing to give accurate ideas and to awaken interest in geography and history, it is open to discussion whether any Fact subject need be taught as schooling at all. Ensure the full development of a man's mental capacity, and he will get his Fact as he needs it. And if his mind is undeveloped he can make no use of any fact he has. The subject called "Human Physiology" may be at once dismissed as absurdly unsuitable for school use. One is always meeting worthy people who "don't see why children should not know something about their own bodies," and who are not apparently aware that the medical profession after some generations of fairly systematic inquiry knows remarkably little. Save for some general anatomy, it is impossible to teach school-children anything true about the human body, because the explanation of almost any physiological process demands a knowledge of physical and chemical laws much sounder and subtler than the average child can possibly attain. And as for botany, geology, history, and geography (beyond the range already specified), these are far better relegated to the school library and the initiative of each child. Every child has its specific range of interest, and its specific way of regarding things. In geology, for example, one boy may be fascinated by the fossil hunting, another will find his interest in the effects of

structure in scenery, and a third, with more imagination, will give his whole mind to the reconstruction of the past, and will pore over maps of Pleistocene Europe and pictures of Silurian landscape with the keenest appreciation. Each will be bored, or at least not greatly interested, by what attracts the others. Let the children have an easily accessible library--that is the crying need of nine hundred and ninety-nine out of a thousand schools to-day, a need every school-seeking parent may do something to remedy--and in that library let there be one or two good densely illustrated histories, illustrated travels, bound volumes of such a publication as Newnes' Wide World Magazine (I name these publications haphazard--there are probably others as good or better), Hutchinson and Co.'s Living Animals of the World, the Rev. H. N. Hutchinson's Extinct Monsters, the Badminton volumes on big game shooting, mountaineering, and yachting, Kerner's "Botany," collections of "The Hundred Best Pictures" sort, collections of views of towns and of scenery in different parts of the world, and the like. Then let the schoolmaster set aside five hours a week as the minimum for reading, and let the pupils read during that time just whatever they like, provided only that they keep silence and read. If the schoolmaster or schoolmistress comes in at all here, it should be to stimulate systematic reading occasionally by setting a group of five or six pupils to "get up" some particular subject--a report on "animals that might still be domesticated," for example--and by showing them conversationally how to read with a slip of paper at hand, gathering facts. This sort of thing it is impossible to reduce to method and system, and, consequently, it is the proper field for the

teacher's initiative. It is largely in order to leave time and energy for this that I am anxious to reduce the more rigorous elements in schooling to standard and text-book.

Now all this schooling need not take more than twenty hours a week for its backbone or hard-work portion, its English, mathematics, science, and exact drawing, and twelve hours a week for its easier, more individual employments of sketching, painting, and reading, and this leaves a large margin of time for military drill and for physical exercises. If we are to get the best result from the child's individuality, we must leave a large portion of that margin at the child's own disposal, it must be free to go for walks, to "muck about," as schoolboys say, to play games, and (within limits) to consort with companions of its own choosing--to follow its interests in short. It is in this direction that British middle-class education fails most signally at the present time. The English schoolboy and schoolgirl are positively hunted through their days. They do not play--using the word to indicate a spontaneous employment into which imagination enters--at all. They have games, but they are so regulated that the imagination is eliminated; they have exercises of various stereotyped sorts. They are taken to and fro to these things in the care of persons one would call ushers unhesitatingly were it not that they also pretended to teach. The rest of their waking time is preparation or supervised reading or walking under supervision. Their friendships are watched. They are never, never left alone. The avowed ideal of many boarding schoolmasters is to "send them to bed tired out." Largely this is due

to a natural dread of accidents and scrapes, that will make trouble for the school, but there is also another cause. If I may speak frankly and entirely as an unauthoritative observer, I would say it is a regrettable thing that so large a proportion of British secondary schoolmasters and mistresses are unmarried. The normal condition of a healthy adult is marriage, and for all those who are not defective upon this side (and that means an incapacity to understand many things) celibacy is a state of unstable equilibrium and too often a quite unwholesome condition. Wherever there are celibate teachers I am inclined to suspect a fussiness, an unreasonable watchfulness, a disposition to pry, an exaggeration of what are called "Dangers," a painful idealization of "Purity." It is a part of the normal development of the human being to observe with some particularity certain phenomena, to entertain certain curiosities, to talk of them to trusted equals--never, be it noted, except by perversion to parents or teachers--and there is not the slightest harm in these quite natural things, unless they are forced back into an abashed solitude or associated by suggestion with conceptions of shame and disgust. That is what happens in too many of our girls' schools and preparatory schools to-day, and it is to that end mainly that youthful intimacies are discouraged, youthful freedom is restricted, and imagination and individuality warped and crippled. It is astonishing how much of their adolescence grown-up people will contrive to forget.

So much for schooling and what may be done to better it in this New Republican scheme of things. The upward continuation of it into a

general College course is an integral part of a larger question that we shall discuss at a later stage, the larger question of the general progressive thought of the community as a whole.