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THESIS PRESENTED FOR THE DEGREE OF M.Ed.

"TRAINING FOR COMMERCE IN POST-PRIMARY SCHOOLS"

15th February, 1934.

PRELIMINARY NOTE.

The whole of what follows has arisen naturally out of the experiences of the last ten or eleven years during which time I have been actively in charge of a school training young people intensively for business life. Roughly speaking about one half of these students have taken the School Leaving Certificate Examination while a small proportion have taken a Degree or have been trained as teachers. I have also trained a number of teachers who were intending to take up the teaching of Commercial Subjects in Central or Secondary Schools.

I have found myself, therefore, in a somewhat unique laboratory: here my students have left school but have not yet started their careers in business; here can be seen the functioning of education. The effort, I am persuaded, to develop abstract thinking in a field of experience remote from life is doomed to failure with the average pupil. Life's problems are never presented in Euclidean fashion. The decks are never cleared. With the traditional curriculum the native instincts and the emotional states arising therefrom are very largely disregarded with the result that when school is over these take charge almost completely. The joy and the

thrill/

thrill of doing things induces that emotional state which is the educator's opportunity.

The pressure of the examination system has resulted in the acquisition of a mass of more or less unrelated facts which being unorganized very quickly fade. The congestion of the curriculum prevents any really scientific approach to the study of English Language and Literature. And I place 'Language' first. Without an exact knowledge of language there can be no further education of real worth for, as Sir Josiah Stamp said to the students at Dundee on the occasion of the opening of the School of Economics three years ago, "words and words again are the symbols of thought, the means of proof, the medium of persuasion".

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AN ANALYSIS OF THE PRESENT SITUATION.

Summary. The present situation is analysed and an effort is made to show that the present curriculum, if judged by the percentage of successes in the School Certificate Examinations, is not suited to a large proportion of those students now attending post-primary schools. It is further suggested that the standard required in the School Certificate is very low and that, while only a small percentage of students in post-primary schools actually proceeds to the university, it is the university that controls the curriculum of the schools. It is therefore suggested that the traditional curriculum is but preparatory and therefore incomplete. The student not proceeding to the university is always being sacrificed. The suggestion that character training is possible only through the traditional curriculum is refuted and the conception of culture differing from the 'Matthew Arnold' ideal is put forward.

Arnold?

At the present time, two apparently contradictory trends are visible in the popular regard for education. Every thoughtful member of the community is agreed on the need for greater educational facilities, while, on the other hand, equally thoughtful members are casting doubts on the worthwhileness of the present education and this casting of doubt gives an excellent opening to those enemies of education who are ever on the look out for really good ammunition with which to attack the slowly growing fabric of education, and what better ammunition could be found than the expressed doubts of educators themselves that something is wrong with the present state of education? Recently, there appeared in the Newcastle Daily Journal, a double-column article of a Report submitted to the Northumberland Education Committee. The newspaper Report had flaming headlines right across the double column,

"FAILURE" OF SECONDARY EDUCATION.

It is true that the word 'failure' was within inverted commas indicating, to the initiated perhaps, that the word was used in a relative sense; yet the plain invitation was to accept the word in its literal sense. Actually, such was the prominence given to the Report that in addition to the main heading there were four other subsidiary headings:-

HUGE COST NOT JUSTIFIED
DISTURBING STATISTICS FOR NORTHUMBERLAND
IS THE CURRICULUM UNSUITABLE?
FEW SUCCESSFUL PUPILS IN EXAMINATIONS.

This was a very interesting Report, although it would be dangerous to deduce too much from such a Report affecting such a small and rather heterogeneous area. A very large part of it is agricultural, while at several places like Wallsend and Gosforth, the area is quite definitely urban. There are many instructive lessons to be learned from this Report. The statistics relating to pupils admitted to secondary schools maintained by this Education Authority are given as follows:-

Admitted	No. under review.	Completed.		Passed School Certificate.
		4 years	5 years.	
		%	%	%
Holders of Scholarships -				
1923	171	80	48	56
1924	299	82	59	58
1925	191	89	68	59
1926	202	86	70	62
Other pupils -				
1923	379	62	35	28
1924	341	67	38	27
1925	368	67	41	27
1926	350	66	44	28

The scholarship holders represent the flower of the students in the County of Northumberland, and together constitute only ten per cent. of all children in the elementary schools of the age of eleven plus. They were selected as a result of an examination which has attained

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some reputation in the country at large, and though many entrance examinations may miss some good students, it can hardly throw up very many pupils of mediocre natural ability, unless it be that the proportion of secondary school ability, if we may so term it, is very small. Yet, of the flower of the elementary pupils, only 60% on the average were able to pass the School Leaving Certificate. When we turn to the 'other pupils' we find that the percentage able to take the School Leaving Certificate successfully was under 30% but the very presence of these pupils in the secondary school is clear evidence of the desire on the part of their parents for further education for their children, a desire so keen that they are willing to pay fees for their children's instruction. If only 60% of the best students in the elementary schools were capable of passing the School Leaving Certificate - the standard of which I hope to show is appallingly low - what can be said of the remaining students in the elementary schools? The only thing we can say is that, on the face of it, in the light of existing curricula, they are, for the most part uneducable. Indeed, I have heard frequently from teachers in elementary schools that the quality of the students left in the elementary school after the age of eleven plus is very poor. To say, however, that the bulk of that residue is uneducable is surely a libel, but if it is not a libel, then obviously something is very wrong somewhere.

Of all the students leaving the schools, only 10% proceeded to universities or training colleges. Certain politicians are very fond of indulging in the metaphor regarding the wonderful ladder that leads from the elementary school to the university. It is right and proper that there should be some such ladder, but in the light of these statistics - parochial as they may be - it would appear as if a very large proportion of the children have started up the wrong ladder. It may be objected that these statistics are exceptional but the Board of Education Returns show that, roughly speaking, the same proportion applies throughout the country.

Quote
them

Here we have a very anomalous state of affairs. The Universities determine the curricula of the secondary schools of this country. No impartial person would deny that, in the minds of the educators, they are definitely testing the fitness of pupils to take up a university career. In so far as that is true, it may be said that the present course at a secondary school is a preparatory one; it is unfinished. The mathematics that the pupil will study will be continued in his university career. The Latin, the French, and all the other subjects will be taken a step further at the university; only the English could reasonably be said to be complete - relatively complete that is - at the school. It would appear, therefore

that a large proportion of the students, having gone a certain way up the ladder leading to the university, find that that particular ladder is pointing in the wrong direction.

In the summer of 1933, there sat for the School Leaving Certificate of the eight recognized Bodies in England 59,743 students. The number of students from state-aided schools who entered the university^{ies} in the year 1930-1931 was 4,132. The two figures are not exactly comparable; the first one includes pupils from schools other than state-aided secondary schools. Nevertheless, here we have a very important ratio, which, if not mathematically exact, nevertheless presents a fairly accurate picture. We have seen that only 60% of the scholarship pupils and only 30% of other pupils in Northumberland were able to pass the School Leaving Certificate. If, therefore, we are very generous and assume that 100,000 pupils start out on a secondary school course, only about one in twenty-five actually goes to the university. This proportion is, roughly speaking, confirmed by the investigation of Professor Burt, who has declared that the number of pupils really capable of being trained for the higher positions in life is only about one per thousand, and that the next category consists of about two per cent. so that certainly less than three per cent. of all pupils are

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capable of profiting from the purely academic curriculum. Dr. Burt goes so far as to suggest that schools should be created for the accommodation of the exceptionally gifted. As things are at present his suggestion has much to commend it.

The Report on the School Certificate, recently issued, casually makes the statement that the School Certificate can be taken by abler pupils at fifteen or even less. I have known a number of pupils who had not reached their fifteenth birthday by several months at the date of the examination. Now the entry to the university is, roughly speaking, eighteen years of age. Obviously, the present arrangement is not one which is suited to the needs of students who are actually proceeding to the university. Many of them now pass at fifteen years of age, and many more would pass if they were trained at their own rate and presented at fifteen years of age. In a manner of speaking we might say that no student is really capable of profiting from university education unless that student can pass the School Leaving Certificate on Matriculation standard at about the age of fifteen. Contrast with this state of affairs where many pupils are able to take the examination at fifteen, the fact that we have frequent complaints from the medical profession of the tremendous strain imposed on pupils by the requirements of the School Leaving Certificate. Hours of

home-work are given, and the whole atmosphere of many schools suggests a life and death struggle to succeed in this examination. It is not arguable that many pupils have to work harder at this period of their lives than at any other. The result of all the hard work and strain at a critical age in their lives is that a certain percentage of them will pass, while, so far as the actual certificate is concerned, the others have nothing tangible to show for their pains. Frequently too, we find students of seventeen and eighteen struggling hard to pass this examination and gain the coveted award of Matriculation. Here then is the situation: we have an examination which we are assured can be taken by bright pupils at fifteen, is passed by a large number at sixteen, and by others at seventeen or eighteen, while a large proportion never pass at all. Is it not manifest that, in the case of all but the brightest pupils, the whole school course becomes a learning and not an educative process? In other words, success at the Matriculation examination may be obtained, and is in fact very largely obtained, as a result of the absorption of a certain amount of knowledge, allied to the ability to reproduce a sufficiency of that knowledge to obtain the minimum pass mark. As we have seen, only about one in twenty-five of the pupils in secondary schools is

actually going to the university, and the object of obtaining the certificate is due to the circumstances which have arisen whereby the possession of the Matriculation Certificate is the passport to commercial life.

Many teachers have seriously argued in print that the business world obviously sets great store on the present curriculum of the secondary school because of the fact that it demands pupils who have been successful in this examination. What other policy is open to the business world? The system of scholarship examinations naturally sends most of the best brains to the secondary schools, and the goal of the secondary school is the Matriculation Certificate. Those who succeed in that Examination are likely to be the best recruits that business can get hold of. As a matter of fact, leaving out of consideration those pupils other than scholarship-holders, the successful students at the Matriculation Examination are likely to be the best recruits in so far as at eleven plus they were so far advanced of their colleagues as to be selected for secondary school training. Quite irrespective of their subsequent training, they have already shown themselves to be bright and intelligent. They represent the cream of the students who pass through the elementary school. It is no argument in favour of the present curriculum that the products of the secondary

School are better than the products of any other school. In the light of what I have said, they must be unless the curriculum deadened all intelligence in them, which is not in the least suggested. But the utter hopelessness for many pupils of the traditional curriculum is seen best in the product of the lesser public schools. Here the entrance examination does not compare with the competitive examination for council secondary schools. In one large Newcastle school of this type it is apparently the practice to divide the students up into streams, but all are entered for the School Certificate and frequently not a single student is successful from the lowest stream. I have had some of them and, while they are often quite intelligent in conversation, so far as general education is concerned they are no better than the product of the council school - even neglecting the difference in age.

I have been closely in touch for many years with actual conditions in business. Ever since the War, commercial undertakings have been growing in size: management has become centralized and businesses tend to become managed in a bureaucratic manner. I do not use the term in any depreciatory sense, but merely to indicate that,

with the elimination of the immediately personal influence, certain regulations are laid down and one of the most common of these regulations is one which demands from all recruits the Matriculation Certificate. In any provincial city like Newcastle, there is a large proportion of firms whose head-offices are in London or elsewhere. I have taken every opportunity of discussing this aspect of the question with a large variety of the immediate employers of young people. These immediate employers, as I term them, are the people as it were in charge of businesses or of departments of businesses, and who have to deal at first hand with the recruits. These people form a large variety, and many of them start off with a prejudice against the matriculant. They themselves probably went into business at fourteen or fifteen without any such certificate, and, humanly, they conclude that the normal product is no better for all his higher education, and is definitely weaker in certain respects. Allowing for all prejudices, there is no doubt that there is a large body of opinion in business which suggests definitely that much is lacking. In a later section, I will draw attention ^{to} ~~at~~ the complaints about weakness in English and in elementary computation, but three things have been repeated to me over and over again. The first is that the present product of the secondary school is quite unable to do simple things correctly; the second complaint is that they are quite

lacking in initiative - that if the circumstances of a case alter slightly, they are unable to adapt themselves immediately and deal with the matter satisfactorily; and the third - and I think the most fundamental - is that the majority of the recruits lack curiosity; they are willing, it is alleged, to deal in a routine manner with documents without having the curiosity to ask what they all mean. They are told to deal in a certain manner with certain things, and they follow out the usual routine without stopping to enquire what it is all about. Does this surprise the educator? Every teacher is familiar with the famous five steps devised by followers of Herbart. They are told that in certain lessons it is vitally important to summon up from the apperceptive masses of their pupils such knowledge as will enable them to fit in the new knowledge that it is desired to impart. What is there in the apperceptive mass of the student who has taken the traditional secondary school curriculum that he can summon up to help him in the solution of the problems before him? If he stops at all to think about the problems that are presented to him, the whole seems 'a big, buzzing, blooming confusion'. Let us look at it in another way. After months of intensive preparation, the pupil of our secondary school is faced with approximately a week of examinations. The last four or five years have been a definite preparation for this particular week, and the last few months an intensive

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preparation for it. There is no room here to present
a typical series of questions that have to be answered,
but here is a representative selection.

1. Prove that the rectangles contained by the segments of two chords of a circle which intersect at a point inside the circle are equal.

If ABC is a triangle, show how to draw a straight line AX meeting BC produced in X so that AX is a mean proportional between BX and CX.

2. If the base BC of a triangle ABC is divided at X in the ratio AB: AD: prove that AX bisects the angle BAC.

Two circles, centres A and B, touch externally at T, and XY is drawn parallel to AB to meet the circles at X, Y respectively; if XA and YB meet in Z, prove that TZ bisects the angle XZY.

3. By how much does $(3x + 1)(x - 2)$ exceed $(2x + 1)(x - 3)$?

Show that the difference is never less than 1. When is it (i) equal to 1, (ii) equal to 10?

4. Solve the equations:

$$(1) \quad 3x - 4y; \quad 10x = 7y - 19.$$

$$(11) \quad \frac{2x - 1}{3x - 5} = \frac{1}{7} (x + 3)$$

$$(111) \quad 5x = 2y - 4; \quad x(x + y) = 10.$$

5. Reduce to its lowest terms $\frac{399}{418}$, and find the value of $10\frac{6}{25} \times (.05)^2$.

6. Explain each of the following:-

- (a) the specific heat of brass is 0.1.
(b) the latent heat of steam, at normal atmospheric pressure, is 537 in Centigrade units.

200 grams of water at 10°C . is contained in a brass calorimeter of mass 40 grams. Show that after passing 5 grams of steam at 100°C . into the water, the final resulting temperature is 25°C .

Point out the assumptions you have made in solving this problem.

7. Describe experiments necessary in order to demonstrate that equal and opposite charges are produced during electrification (a) by friction, (b) by induction.
8. What are the effects of the Ice Age in the British Isles (a) in the upland regions, (b) in the lowlands? Refer to definite places wherever possible.
9. Describe the physical features and the distribution of population of either the Hampshire Basin or the Lake District.
10. Translate the following, and explain the construction of the words underlined:
- (a) quanti haec vendidit?
 - (b) me puero Cicero natus est.
 - (c) omnium hominum fortissimus est.
 - (d) iussu dicis adsum.
 - (e) furti te accuso.
11. Give an account of the relations between Abraham and (a) the King of Salem, (b) the King of Gerar (Douay Version: Gerara). Show by a sketch map the position of the two places.
12. Describe the steps by which a purely Jewish body expanded into a world-wide church, pointing out in these various steps the guidance of the Holy Spirit.

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The examination over, the student breathes freely and, if he is fortunate, he goes off to enjoy his last long holiday, and so, if he is still more fortunate, to business. This is the end of his formal education; what is there in it that has reasonable reference to his further life's work? He is suddenly launched out into a world of intricate mechanism which suffers from the fact that it was not designed but simply evolved. It is an intricate mechanism evolved for the satisfaction of human wants; of its basis he knows nothing; all that he hopes is that there may be a job for him somewhere. The relation of that job to all other jobs and to the mechanism in general is not thought of. The suggestion here made is that there is only a very small proportion of minds capable of developing abstract thinking from the present curriculum and thereafter of being able to think abstractly on problems of an entirely different nature. The definite suggestion is that apart from the few Education is largely a learning and not an educative process.

The present organisation and curriculum of schools are matters of history, and it is a well-known fact that, prior to the coming of the factory system and the growth of large towns Education largely consisted of what was gained from the varied occupations of home life and home work. In his book "A History of English Elementary Education" Professor F. Smith says:-

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"The chief educational agencies for the poor in the early eighteenth century were the home and the occupation. While the peasant was a part-producer he had to bear responsibilities and weigh probabilities which, at a later time, were transferred to his employer. There was infinitely more significance in a life which made such varied demands and which brought him face to face with the fundamental factors and problems of existence, than he had to contend with when he became a factory operative and repeated a small cycle of mechanical movements without variation and without thought.

In the earlier order of things the father educated his son by a varied life out-of-doors, by growing food and breeding cattle, and the boy acquired his skill at an early age. His object lessons were got from the smithy, the weaver's shed, the mill, and the carpenter's shop, and his imagination was fired by the stories and legends which belonged to the familiar woods and streams and the neighbouring castle and manor. If he could not read he knew much at first hand that was of more importance, and if in later years his mind grew slow and stagnant, his boyhood years at least were a period of educational discoveries. Nor was his skill confined to out-door pursuits; with his sisters he filled up the hours of leisure in the house by industrial occupations, by spinning, weaving, and simple repairs to tools and implements; the girls, in addition, learnt how to perform the necessary domestic activities. Perhaps the picture is idealised, but it is obvious that when a household was so largely dependent on its own exertions, the stimulus to acquire skill was a force of which we now have no conception, since it has disappeared from our lives. We buy our food, our clothes, our comfort; our forefathers had to provide these things for themselves.

The relationships of human beings were also more educational then than now; there were all ranks of society in the small community, and no congestion of homogeneous groups in allotted districts. The farm servant and the cottager might hope, with industry and thrift, to rent a small farm, and, later, pass on to a larger one, perhaps even attain the position of a small freeholder."

The only thing that was lacking in this type of education came to be the only thing in Education. The growth of towns and the appalling conditions of child labour led gradually to the establishment of a system of popular education which culminated in the famous Revised Code of 1861 which embodied payment by results, the result being efficiency in the "three r's". If we contrast the type of education set out in the passage quoted above with that obtained in the school in the latter half of the nineteenth century, we shall see that all that is best in education had departed to be substituted by the purest mechanical ability in reading, writing and arithmetic. Well might we say as Pestalozzi said in analagous circumstances:- "We make all nature around them vanish before their eyes, and pitilessly chain them for hours, weeks, months, years, to the contemplation of unnatural and unattractive letters". To understand what was read was seldom thought of. Nothing really passed through the minds of the children, and Pestalozzi might have been referring to the conditions of education at this time when he said:- "A man who has only word wisdom is less susceptible to truth than a savage the blind use of words in matters of instruction must be extirpated before it is possible to resuscitate life with truth".

As I see it then, it is the task of Education in the light of modern conditions, to recreate the educational atmosphere that existed prior to the Industrial Revolution, adding to that education, of course, the ability to read, write, and count. While no-one would deny that great strides have been made since those days in the elementary school, nevertheless, much of that spirit is still preserved as is evidenced by the examinations at eleven plus, which are generally confined to writing and arithmetic, the reading presumably being taken for granted and consequently, to a large extent, neglected. Anyone who has experience at first hand of the product of the elementary school must confess that one thing that school has not given the average pupil is speech. With the creation of the secondary school system in 1902 the traditional classical curriculum was followed, to be overlaid in certain cases with several of the branches of science. Actually the question of training a large body of young people from eleven plus to fifteen or sixteen is a new problem. The numbers going to secondary schools have been increased annually. Even in the first year of the War, there were just over 200,000 children in the secondary school, whereas in 1932 there were over 450,000, which is over ten per cent. of the total population. The establishment of central schools, greatly encouraged by the

Hadow Report, has brought in a very large number of new students taking a post-primary course. Most of these schools suggest that they are taking a certain kind of education leading generally towards certain industries or groups of professions, but a regular perusal of the vacancies offered in the "Times Educational Supplement" will demonstrate that, with the exception of a little shorthand, book-keeping, and sometimes typewriting, there is very little difference between these schools and the secondary schools already in existence. The same type of teacher is in demand, the only difference being apparently that the secondary schools, offering as they do higher salaries, have first call on those teachers most distinguished academically. To a very large extent, the new schools are secondary schools in all but aim. Many of them actually do present students for the School Certificate and this is very obviously regarded as being an excellent achievement on their part, instead of being a condemnation or at least an exposure of the weakness of the scholarship examinations. In those cases where they do not follow this procedure in attempting the School Leaving Certificate, the curriculum is, nevertheless, very little varied from that of the ordinary secondary school. The schools have been described, quite pardonably I believe, as providing a watered-down secondary school curriculum. If consideration is given to the matter, it can hardly be

wondered at, for the teachers have no experience to guide them, other than their own training. It must be remembered that the present trend of the universities for honours specialisation means that in general, the honours graduate is but ill-educated outside his own subject. If that subject is not one that gives a very wide outlook on life, then he may be uneducated. In many cases where, for instance, commercial subjects are introduced, they are frequently taught by ordinary teachers who first of all have no background of knowledge to assist them in presenting their subjects properly and, in the second place, very frequently have but a very slight acquaintance with the subjects they are teaching. No-one seems to care very much how these subjects are taught, and the spirit of the whole thing is that very frequently such subjects are given as a sop to parents and children. If they must have them, let them have them, but they are not an important part of the curriculum. I have tried in a very short discussion on the School Leaving Certificate, to show that, for a very large proportion of the pupils in the secondary schools, the traditional curriculum is not pursued with much success. The central schools, for the most part, are considered to hold - as evidenced by the scholarship examination - students of lower mental order than is found in the secondary schools. If that is ^{the} _A case - and I

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believe it is generally true - then obviously even a watered-down secondary school curriculum is not likely to be pursued with more success than in the case of the secondary school. The absence of examinations will mean that any non-success will not come to light with such clarity as in the case of schools preparing definitely for the School Certificate. It will, on the other hand, enable many schools to experiment and in that lies great hope.

It is necessary at this stage to make clear what it is exactly that we are aiming at, what it is that we desire the children to gain from school life. The aim of the elementary school, and I presume of the post-primary school, is laid down by the Board of Education as follows:-

The purpose of the elementary school is to form and strengthen the character and to develop the intelligence of children entrusted to it, and to make the best use of the school years available, in assisting both boys and girls according to their different needs to fit themselves practically as well as intellectually for the work of life."

Stated in these general terms, no-one could possibly object; that statement represents a very noble ideal, and the only question is, how far the traditional curriculum and the manner in which it is carried out embody that ideal. Over and over again, in discussing with teachers the curriculum of the secondary school, I have been met - not to say silenced - by the statement that the aim of education is the training of character. The reason for

the statement in particular instances has been varied; sometimes it arose out of the disinclination to follow an argument to its logical conclusion while, at other times, the statement has definitely implied that there can be no possible training for character other than through the traditional subjects. Several times, I have heard distinguished teachers, when called upon to address teachers of commercial subjects, devote their whole address to a discussion of the wickedness of business. There seems to be a very wide-spread idea among teachers, that commercial training and character training cannot go together. At a recent luncheon of a National Body, one of the speakers who has taken a leading part in commercial education, both in this country and America, mentioned in the course of his speech that ethical training was of the first importance in commercial education. He was followed later by the Headmistress of a large London school, who expressed astonishment to hear such a statement at a gathering of commercial teachers.

"There are many people" she said, "who would be surprised to hear that at this Conference to-day you said that the greatest thing in commercial education is the training of character. I have come, as I say, as an outsider, and I have been reminded for over twenty-four hours of a remark made to me by Sir Robert Blair. It was

after one of our educational conferences; we were coming out from a meeting of the educational sections and some business-men were coming out from one of their meetings. Sir Robert Blair said to me: 'You know, you folks should be speaking where they have been, and the business-men ought to be having their platform with you'. I feel that if only two hundred teachers could have been at your conference for these twenty-four hours, that maybe that prejudice which exists would have been got rid of to some extent."

The old tradition dies hard, and I think there is still a very wide-spread idea that in business, if one person or firm makes a deal involving a profit that necessarily some other person or firm makes a loss, and that consequently business consists, very largely, in doing the other fellow down, and that if you do not do him down he will do you down. This attitude of mind has perhaps been much encouraged by certain types of literature. The theme forms an especially convenient one for a three-act play. This is but one aspect to which I shall return later - the utter lack of knowledge throughout the community as to what commerce really is, what we are doing in business. The realisation of this would, I think, prevent many writers insisting on what they call education for life, as distinct from an education for a vocation. It should be an important aim in education to try to show each individual

or rather that there is a particular place for each individual in the service of the community, and that each individual gets remuneration for his services to the community. Training for character is not a matter of subject but a matter of teacher. Professor Dewey puts this matter in the proper light:-

"What we need in education, more than anything else, is a genuine, not merely nominal faith in the existence of moral principles which are capable of effective application..... What we need is to have these moral principles brought down to the ground through their statement in social and psychological terms. We need to see that moral principles are not arbitrary, that they are not merely transcendental, that the term moral does not disguise a special region or portion of life. We need to translate the moral into the actual conditions and working force of our community life, and into impulses which make up the education of the individual. All the rest is mint, anise, and cummin.

The one thing needful is that we recognise that moral principles are real in the same sense in which other forces are real: that they are inherent in community life and in the running machinery of the individual. If we can secure a genuine faith in this fact, we shall have secured the only condition which is finally necessary in order to get from our educational system all the effectiveness there is in it. The teacher who operates in this faith will find ethical opportunity in every branch of study, in every method of instruction, and in every incident of school life, from the first day to the last."

Incidentally it might be mentioned here that if the curriculum were more closely identified with the natural interests of the child and his future occupation opportunities for ethical training might be the more

lasting as being more direct. Much ethical training while quite sound in itself, very largely fails owing to the one factor - that the pupil regards the whole matter as outside himself.

Even so, it would appear as if modern conditions now impose another duty on the schools. Until the end of last century, there was present, unexpressed perhaps but none the less felt, a great system of belief forming a background for the whole scheme of life. But towards the end of the Victorian era came the diffusion of scientific knowledge and the new point of view became part of every-day belief. The great World War only hurried on the disintegration of man's belief. The mechanist view of the world propounded by science seemed to take away the foundation of existing beliefs, and the War made men question their beliefs further. What is it all about? What is life for? But while science and the World War had these profound disruptive effects, neither could put up a new standard of belief. The social animal man now found his faith in all the great institutions, church, family, state. The representatives of the old belief being undermined, the old dogma has very largely gone but nothing else has appeared to take its place. But sustained action pre-supposes fundamental belief; hence arises the instabilities of the present day. Moreover, a very large proportion of the children in the schools now receive little or no

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religious training at all, and if the school is to achieve lasting success, it would appear to be necessary for it to take over this other task as well. Religious teaching there has, of course, always been, but something more vital is necessary to meet the needs of the time. I do feel that some definite ethical teaching is necessary to put before the children high moral principles and ideals of conduct. The history of education, especially in the older countries, indicates the gradual secularisation of education, but if we can no longer teach dogmas, we must teach aims. Preaching at children is very largely unavailing, and as I have indicated, much ethical training can be got in the course of everyday teaching.

It is often said that education in the traditional curriculum gives a training for life, sometimes narrowed down to a training for leisure, and that that is the sole business of education. No-one has put the matter more forcefully than Mr. George Sampson, in his lively little book "English for the English", in which he states:-

"Think of the schools in our mining villages. The boys are the sons of miners and the brothers of miners. They are born into the atmosphere of the mine, and in due course the mine swallows them up. No sane person can really believe that it is the duty of the schools to underline the obvious, and tune the minds of these children for ever to all the grim and dusky circumstances that encompass them. To put the matter quite plainly, I deny utterly that it is the business of the elementary school in a mining village to teach the boys to be miners. I assert, on the contrary, that the elementary school

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in a mining village must be conducted without any reference whatever to coals or mines or managers or directors or share-holders."

Now to put it also quite plainly, a course of education which ignores the major part of life can hardly be said to be a preparation for life. As things are at present, the working day from beginning to end certainly occupies more than one third of the whole. What a person does during more than half his waking life is surely going to have a profound effect on his character. Professor Spearman has said:-

"Every individual, ~~man~~ man, woman and child, is a genius at something as well as an idiot at something. It remains to be discovered what - at any rate in respect of the genius."

I would go further than this. The ideal state is surely one in which every individual is engaged in such a task, in such service as best fits in with his natural aptitudes. We are far, far, away from that stage of society when the village community was practically self-contained, division of labour has been carried to such an extent that one is apt to miss the importance of each function in the whole, but each function is necessary and it would increase the well-being of society if every individual were engaged in some form of service for which he has a natural aptitude. Who will take on the duty of seeing to this if the educator does not? Who else can take on the duty? It does not

mean, of course, that all occupations must be analysed and a separate syllabus got out for each, and a definite curriculum prescribed. That apparently is what is in the mind of Mr. Sampson, though, to be sure, would he object - considering the present state of affairs - to schools in a mining community drawing the attention of pupils who are expected to go on into the mines to items such as ambulance work and such practical science teaching as will give to the embryo miner a respect for the forces of nature. By all means let there be all the humanising influences possible brought into the lives of such children, but why ignore entirely his occupation? Can the educator escape blame altogether, for instance, for the fact that miners will take matches into the mines, and thus endanger the lives of all engaged there, and that still many will not take the trouble to follow the regulations that have been laid down for the safety of all. It is not a question of training miners; training for life and training for an occupation are not antithetical; the training for both should go hand in hand. Education, owing to considerations clearly discernable in the history of the development of the schools, has become almost synonymous with reading and has neglected most other sides of human nature. As a matter of fact, those who most object to any departure from the traditional curriculum

and who oppose any suggestion of vocational training, have themselves had a training which is distinctly vocational, that is to say, those who really derive benefit from the present curriculum very largely use that curriculum as a means of earning their livelihood. The issue is clouded rather owing to the fact that, for the educator, the traditional curriculum is both an education for life and an education for his vocation. He should ask himself 'If I were not directly engaged in this line of business, how much of it would I really want to retain?' To a certain extent, therefore, the ordinary educator is not in an unbiased position. He definitely has had a vocational training, that, in fact, is very largely the complaint against the traditional curriculum. What we want is to have a curriculum that will make up a training for life and a training for the vocation. Before going on to discuss the curriculum which I will put forward as being of the greatest value to those pupils who are going on to commerce, I will first of all state, very shortly, the relation which this type of education should bear to other types.

Dr. Burt's investigations into the abilities of children have brought out the following main categories. In the first, he places about .01% as being of the highest possible mental calibre: in the next are placed just

over 2%: and in the third group about 10%. The main body consists of about 80% and the remainder are regarded as having a very low I.Q. I assume the right of every individual child to an education up to fifteen or sixteen. At the present time, education of the existing type is provided for those students who can profit by it, and it is more or less tacitly assumed that the remainder are hardly worthy of any further formal education. Not so long ago, I was informed by a teacher that one of His Majesty's Inspectors, in discussing certain children, had said that all the school could do for such children, was to give them sufficient ability in reading to allow them to ascertain the football results on Saturday night and an ability in arithmetic sufficient to allow them to count up the contents of their pay envelope at the week-end. I do not know how many hours exactly we confine this type of child to a desk, but what horrible cruelty it must be. The net result, after years of schooling - I do not by any means minimise the other gains such children may have obtained from their school life - in reading and arithmetic is almost negligible. The case I have mentioned may be an extreme one, but there is no doubt that quite a large proportion of children come out of school with a very meagre ability in reading and computation, and an almost complete inability to put down anything coherent on paper.

From the social point of view, this class is clearly in need of a reorientation of their education. Bagley, I think it was who said that education was largely a battle against nature, and here, in all conscience, is a battle, the result of which can never be in doubt. The old process of formal education to this class must be at all times in direct opposition to their wish-energy. What conflicts must have gone on in their minds during the process! It is not merely the waste of time for both teacher and pupil; it must be a most damaging experience for the child. Is it not here that we produce that antagonism to society which breeds the criminal and further, are there not some lessons to be learned from the success of the Borstal system of training young offenders? Roughly two-thirds of the young offenders do not give any further trouble, but in this connection, it must be remembered that the Borstal treatment does not start on virgin soil, for the school and all other influences have been at work, and it may be that the school, appealing to no direct interest of the child, has been no mean factor in turning the young delinquent against society. These, of course, are at the extreme end of the intellectual scale, but, nevertheless, there must be a very large body of children who are docile enough not to engage in open warfare with society. Here then we have the one end of

the scale - omitting altogether the mentally deficient - those pupils for whom the existing type of education seems to do very little, and at the other end we have the .01% and the second section, consisting of just over 2%.

Assuming that the present practice of making the break at eleven plus is a sound one, it seems to me that there should be a much larger number of divisions and a much larger number of different types of schools to correspond more or less exactly to the different types of natural aptitudes that have been disclosed.

The traditional curriculum trained definitely for a certain narrow circle of vocations. It was indeed originally a purely vocational training and it would be a miracle, would it not, that a curriculum which originally was a vocational training should, somehow or other, now be found to be the one definite type of curriculum that will provide a training for the life of culture? That is the view-point, I believe, of those who would uphold the traditional classical curriculum or its modern substitute, in which the study of Greek has been eliminated and a host of sciences put in its place. Now the traditional classical curriculum, I am persuaded, never really touched more than a fraction of the small numbers who were 'educated' in the days before the dawn of popular education.

I believe, too, that the fraction is not necessarily any greater now. A fundamental mistake is made in believing that there can be any virtue in a curriculum per se. The value of a curriculum depends on how far it can be identified with the real personality of the pupil; the curriculum if presented aright, should meet a powerful inner want; it cannot be 'laid-on' from without. Lady Warwick, in her reminiscences published only a year or two ago, mentions specifically that the opposition to popular education of people in her own class did not arise from a desire to keep education from the lower orders, but on account of the fact that many of the men simply could not understand what on earth working-men wanted with education. To them, it had meant meaningless learning by rote, combined with periodical flogging. Coming from any other source, such evidence might be suspect, but Lady Warwick's sympathies will guarantee that her recollections, in this respect, are accurate. It is quite obvious from this that the education of the upper classes did not come from the traditional curriculum and the only people who really profited were the small band of learned. The upper classes of that day, as well as a very large proportion of the people today, have got most of their education outside school. These educational forces have always been, of course, recognised, and their effect has very largely clouded the issue and obscured the fact that the school curriculum is not necessarily effective.

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Lord Baden-Powell was educated at Charterhouse where, he confesses in his autobiography 'Lessons from the 'Varsity of Life', he made little of Latin or Greek or Mathematics; "Indeed," he says, "I had to commit Euclid to memory in order to scrape into the army". Greek and Latin grammar for boys not interested he described as a stupid waste of time. Yet, surely 'B.P.' may be regarded without exaggeration as the greatest educational reformer of this century. One might almost say he has added the other half to education.

The Right Honourable Margaret Bondfield broadcast in the series 'Rungs of the Ladder', and her opening sentences were these:-

"But the greater part of my education consisted of what I gathered from books and from our activities at home in which all the children in turn were expected to take a part. We were made familiar with the use of gardening and simple carpentering tools. We fetched the cows to milk, fed the pigs and chickens, weeded the garden, helped with cheese and butter-making and other tasks that are associated with a family that grows most of its food supply on a five-acre farm. We made up our own games and imaginative adventures. There was the inexhaustive glory of the countryside, hunting for snakes or the first periwinkle, and there was always our mother, undemonstrative, incisive, just, and with a lively sense of humour."

These references are brought forward to suggest that culture, like truth, is many-sided, and cannot be confined to reading or even to the Mathew Arnold ideal. The traditional culture was the product of leisure.

The ancient Greek culture depended on the existence of a slave population and ever since, culture has depended, to a greater or less extent, on a certain amount of freedom from the economic necessity of work. Large sections of the population were mainly concerned in providing for their physical wants, and little time was therefore left over for the acquirement of culture, that is, understanding the term culture in the traditional way. Professor McMurray, in a recent book, takes up, seemingly unconsciously, two different points of view. At one stage, he says:-

"The culture of the individual is the sum total of what he does with his freedom. Similarly, the culture of a community is the net result of all the spontaneous activities of its members."

Only a few pages earlier, however, he had written:-

"The man who labours at his carpenter's bench, taking pains to see that his fitting is exact, is doing his duty, but if he sings as he does it, there is something more than duty in him, and that something more is the very pulse of life itself and the source of all true culture, and when you catch a man singing at his work, you know he is not doing his work as a duty, but as a spontaneous expression of the life that is in him."

Professor McMurray is rather obsessed, I think, with the idea of sharing out equitably all the necessary work of this life, and that after a man has done his duty, his opportunities for culture begin. But that is only one aspect and looks like a propaganda argument against the existing state of things. A man's work cannot be analysed

in this manner. Professor McMurray is starting off in the belief that all men are essentially equal, and that owing to modern machinery, there is only necessary a very small amount of duty to be done by each, and that thereafter, every individual is free - "the minimisation of necessity, and the maximisation of freedom". It was H. G. Wells, I believe, who put this matter in proper perspective - that you cannot judge a man by what he does in the world, but by how much he falls short of his own potentialities. Duty cannot be imposed from without, and all men are equal only in a very relative sense.

I believe that the insistence on leisure as a pre-requisite for culture a very mischievous idea. A very superficial study of the instincts of man will show that he was not born for leisure. The ideal to keep before us is summed up, I think, in the quotation from Professor Spearman given above. If everyone were engaged in that occupation for which nature has best fitted him, then he might be said to be living spontaneously and in that sense the two conceptions may merge. As Professor McMurray says, the possibility of a democratic culture depends upon developing this capacity for spontaneous action in everybody. But is it a fact that culture depends on leisure? The answer, I think, is that it does so only in so far as the individual is normally engaged on an everyday task that is uncongenial, that is,

out of harmony with his real nature. Only then can it be said that a man works to live. Such phrases as 'Education for leisure' seem to me to be dangerous in throwing emphasis on the wrong thing, in giving the idea that there is no need to prepare for work - that that side of life can be done anyhow. The filling in of leisure time in a world crying out for a thousand and one things to be done suggests rather a poor ideal. The essence of this thesis is that there may be culture in every aspect of life, that culture is not, for instance, a question of subject, but of the way in which the subject is treated. I would go as far as to suggest that those who act consciously on such shibboleths as 'Art for art's sake' and distinguish pure science from applied science are in the very act denying the possession of culture at all. The idea that culture and utility are essentially opposed is an entirely false one. Ideals of truth and beauty can be seen in all branches of life. I make bold to say that even such an apparently mechanical art as typewriting can be made to yield its fair quota to the sum of culture. The very act of typing rhythmically strikes a responsive chord in the human nature, and the great variety of work involved makes typewriting an excellent vehicle for the inculcation of high ideals of beauty. The same work done on a typewriter can produce the untidy mess of the slovenly slut, or a thing of beauty, expressing the

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cultured mind, and the slut can be taught and encouraged to have a finer conception. This is not to suggest that the road to culture is through a typewriter, but such a statement would be just as true as that culture is only to be got through pursuing a certain type of course. Much of the **aloofness** of the educator is, I think, due to this idea that culture is confined to certain branches of life, and that it must never be tainted by contact with anything utilitarian. In some respects, they may have right on their side, especially from what they see close at hand, for it can hardly be argued that a great deal of the science that is taken in schools is cultured in any sense.

The two essential assertions already made, therefore, are that culture cannot be confined to the traditional Oxford and Cambridge ideal, that it may partake of many forms, that it can be found in many avenues of life and work, and that consequently it does not necessarily depend on **Measure**. The attempt to impose one kind of culture on all is the greatest weakness of education, inasmuch as it has so far resulted in the great neglect of all types of soil, other than those in which the seed of the traditional ideals of culture flourished. For too long the educator has looked upon all other soil as barren.

Perhaps I cannot do better than close this section by quoting the dedication in the book 'First Steps in Art and Handwork' by Professor Ella Dobbs, Professor of Applied Arts in the University of Missouri:-

"Dedicated to little children everywhere with the hope that each day they may find beauty and happiness more closely linked together in the common affairs of life and that as they learn to live happily and beautifully they may find ugliness and wickedness disappearing^{all} together from the world."

THE CURRICULUM - OLD AND NEW.

Summary. The work of the child at school must be in real harmony with his own nature and no amount of meretricious aids will transform a curriculum that is out of harmony with the child's nature. The traditional curriculum was only successful with a very small percentage. A curriculum that would be suitable for post-primary pupils whose future life is expected to be spent in the commercial world is then put forward and its relation to curricula for other types of students is indicated.

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Educators are really obsessed with the traditional curriculum. Somehow or other there is always at the back of their minds the feeling that this curriculum is the 'Correct' one, the 'real' one. In the Hadow Report it is suggested that it would be inadvisable to expose the existing secondary schools to 'undesirable' competition, although one of its witnesses, Mr. Hallam, representing the Association of Directors and Secretaries for education, 'expressed the opinion that some of the pupils in the existing secondary schools would profit more by a less academic curriculum'. The same reverence for the traditional curriculum is seen in the statement on Page 44 of the same Report. "The precise proportion of children 'capable of profiting' by post-primary education is not susceptible of exact statistical expression." My point of view is that all are capable of profiting from a post-primary course, but the post-primary course must be one adapted to the needs of the children.

This I believe is all the more desirable from the social point of view as it is from the ranks of the uneducated that there emerges that class likely to wage war against society. Modern psychologists have concentrated a great deal of attention on the unconscious and sub-conscious mind and emphasis has been laid on the tremendous effect of the creative impulse. The natural application

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of these theories to educational practice would suggest that much of the present curriculum is quite out of harmony with the wish-energy of the pupil. The result is not merely negative, but leads to internal conflict and disharmony, with the result that the pupil does not develop on lines in keeping with his nature, but is living at cross-purposes with himself, thus dissipating in large measure his native energy. The problem therefore, for the educator is to bring his teaching into line with ~~the~~, and not in opposition to, ~~the~~ unconscious wishes of the pupil. Professor Dewey puts it thus: "The end and standard of school work is to be found in its functional relation to social life. The business of the school is to connect the instincts and impulses with the spontaneous activities of the child and the aims we expect these powers to realise. This can only be done by the child himself; the teacher cannot make the connection."

Can we say that the school in principle attaches itself to the active constructive powers rather than to processes of absorption and learning, the acquiring of information? Does not our talk about self-activity largely render itself meaningless because the self-activity we have in mind is purely intellectual, out of relation with the impulses of the child which works through hand and eye.

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There is a certain type of character, everyone knows it, which for want of a better term can only be described as colourless. The individuals concerned have completed the secondary school course, and passed the School Leaving Certificate, yet we find them as beings of practical worth - as individuals able to initiate anything, left behind by others who have had to be taken away from school because of their inability to make progress, and also by students who have never been inside a secondary school. As I look back over the students who have joined our school year after year I see a very large proportion of this type whose only virtue so far has been an ability to absorb information combined with the ability to reproduce a sufficient amount of that information to get a certain number of marks in an examination. Why is this? The suggestion here is that the child's powers have been smothered in the educational process. It has been a learning process and acquiring information can never develop the power of judgment. The test comes when the information has to be used. Yet the school facts are dinned into the children, and facts all seem to have the same importance. The child cannot get power of judgment except as he is continuously exercised in and forming testing judgment.

The work the child does at school must be in real harmony with his own nature, and no amount of driving on the part of the teacher will make a great deal of difference except to get that apparent outward interest which satisfies, while all the time the real interests are in the day-dreams. Only so far as the proposed knowledge can be made attractive to the pupil as being something demanded by his nature - just so far will the pupil lay hold of it, and take it to himself. When this desirable state is achieved, harmony results and the pupil experiences real pleasure in the activity, not merely the pleasure of a spectator. That this harmony is unusual is seen in the constant necessity for repetition. If the knowledge were such as was felt to be supplying a real want then co-operation would result, and the task of the educator would seem to be to get the pupil engaged in pursuits which satisfy his natural instincts. Much of the energy of the teacher is taken up in attempting to make his particular subject interesting, and much has been written on the various ways by which interest can be stimulated, but I would suggest that any apparent success in this can only be in the nature of a surface success. If the interest engendered arises with the desire to do well generally, to please the teacher or the parent, or if it is merely interest created by the desire to secure a good economic position in

the world, the result may be success in an examination but such success does not mean that the pupil is educated fundamentally. Much of the knowledge that is painfully acquired quickly disappears.

Only those pursuits that have become a real part of the life of the pupil can be said to have any really permanent influence in moulding the character and determining the level of culture attained. All else is veneer. Of course, the child may not be able to see exactly that any particular subject may meet his real needs, and it is a necessary task of the teacher to bring him to this realisation. Too often now the only appeal a teacher can make is an appeal which borders on blackmail: "If you do not attend to this subject and do well therein, and pass your examination, then you will fail to get your Certificate, and you will not be able to get an entrance to the university, or you will be at a great disadvantage in your search for work, for business men will only have those boys who have obtained the matriculation". Such an appeal may secure the desired percentage of successes but it does not necessarily mean that the pupils are being educated.

It is the contention here that the traditional curriculum has only been really successful with a small percentage of pupils - those who found their real interest

How many times is this like said. Reputation is not proof

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met by the subjects of the traditional curriculum, and by a larger but still relatively small percentage in whom some kind of mediated interest was created. That is to say, a very small percentage found real interest, while the second lot, finding it necessary to achieve success with it for its specific purpose, managed to arouse in themselves sufficient interest to enable them to reach the standard necessary. But life outside the school has catered for the instincts of both child and man. While the educator has been at great pains to analyse and classify the various instincts, and neglected to take them into account in the curriculum, the commercial world has not been slow in taking the matter up, and catering for, not to say pandering to, the natural human desires, and the very fact that the educator has neglected to bring his curriculum into harmony with human desires has made the success of the commercial caterer all the greater, but the instincts catered for commercially give rise to the more or less transient pleasures, and leave out of account altogether, the two impulses whose gratification yields increase in pleasure - the creative and the constructive.

The 'new' psychology has been insistent in calling attention to the tremendous force of the creative instinct, a deep-down all-compelling force to create, not necessarily

something/

something new for the world, but something new for the particular organism. This all-powerful instinct - the source of all the arts - is almost entirely neglected in the traditional school curriculum. To be engaged in pursuits in harmony with the natural impulses results in pleasurable activity, and it may be suggested therefore, that as the pupil is always engaged in occupations which give him pleasure, he will be the less inclined to face up to difficulties when they arise in life, that, in other words, he will be undisciplined. But the greatest thrill, the most satisfying, is in solving difficulties that have a real meaning. There is doubtful pleasure in attempting the solution of difficulties that have been presented by someone else, but when in the course of satisfying some felt want a difficulty arises, the emotional urge to find a solution is infinitely greater, and, therefore, the effort is the more likely to be successful. The danger with externally imposed difficulties is that once the authority of the teacher is taken away the pupil will merely avoid difficulty.

So far the criticism of the traditional curriculum has been mainly destructive. What, it may be asked would you put in its place? The Course that I shall attempt to justify for those pupils whose future life is expected to be spent in what is generally termed Commerce, is but one course among five or six others. At one end of the scale

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there is, I believe, a very large section whose capacity for abstract thinking, while it may never be great, has no opportunity for developing at all under existing conditions. Two later sections of this thesis are devoted to the subject of English and Mathematics. The suggestion is there put forward that for this class too much time is taken up with Mathematics and too little with English. In addition to these subjects I believe that an education more in keeping with the real nature of this 'lowest' class might consist of: Health Education; Music and Rhythmic Exercises; Every-day Science; Gardening; Cabinet-Making; &c., for boys; and Cookery, House-wifery, Tailoring, Millinery, &c., for girls. This last named subject is not intended as something subsidiary to the main education, but as the pivot of the whole education.

I realise that a supply of suitable teachers might possibly be the greatest difficulty, but that could be overcome probably at first by utilizing more intelligent craftsmen who might work in conjunction with a properly trained teacher. Out of such a combination much good might result. Ideally, I think, an education of incalculable value could be obtained from a course of this nature.

Accurate Arithmetic and English, both written and oral, could be insisted upon. The history of the art or craft, painting and drawing, could be brought into it, and

the whole might provide a cultural training of the very highest value. All the more so, in that it would be meeting a felt want of the pupil, for as Professor L. P. Jacks has said : "anything that one does - from cooking a dinner to governing a state becomes a work of art if modified by the passion for excellence, and then done as well as it can be ". Much of the curriculum which I will now outline for the Commerce student would be common to all, but as the pupils would be divided up as nearly as possible according to their natural aptitudes the content and presentation of the work would be varied to fit in with the demands of each group.

One of the most striking points about the present curriculum is the entire lack of any reference to the manner in which society has organized itself for the purpose of living together. The first essential in the re-planning of curriculum is to realise the essential basic fact that we live in communities, and that it should surely be a primary duty of the educator to give his pupils some idea as to the complete organization and the individual's particular part therein. I have listed above the subject *where* 'Economics and Civics'. I realise that these are ominous words. Economics, the dull science, has never been a popular subject, but has always been regarded as one for the expert only, and even the expert has now been called in question. The present disorganization of the world has entirely upset the pre-conceived ideas of all orthodox economists and recently we have the spectacle of a celebrated American banker making the pronouncement that there are only eighteen people in the world who know what Money is, and only two of them belong to our own race. But the difficulty of Economics arises very largely in the method of presentation. The subject has become entirely too abstract and formal. At present the Theory of Value for instance, as it is usually done in text-books on Economics means that the subject simply cannot be studied by young people. It is entirely beyond their abilities as thus

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presented, but the subject in its main features is not inherently difficult, but has been made so by the great dread of economists that if they presented the subject in a popular way they might be accused of being unscientific. *abund*

Young people are not capable of accepting conclusions that are based on years of experience and a broad knowledge of facts. Such abstractions as Marginal Utility, Surplus Value, and the Law of Diminishing Returns are outside the scope of young people. They have not the experience of the world and its organization; they have no background into which they can fit them. Yet the fundamentals of Economics are not beyond the abilities of large numbers of young people. It should be possible to set out in simple form a short history of the evolution of the present organization of society from the very simple village community which lived to itself - which had to live to itself because of the lack of any effective means of transport. Everything that was eaten, everything that was worn was made in the village community itself, and to visit a town twelve miles away was an event of unusual importance. An informal discussion of a present-day breakfast or dinner table would quickly reveal to a class that the whole world is now called upon to supply the eatables for one meal. The contrast between life today and that of a hundred years

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ago would bring out the idea that now-a-days the whole world is an economic unit, and that, ideally, every country produces those goods and provides those services which nature has best endowed it to produce or render, and that thereafter each country exchanges its goods and services for those of other countries. The first single cause of this revolution was the utilization of steam power both in land and sea transport. Later came the wonders of refrigeration, thus enabling perishable articles to be brought from every part of the world. Out of this has grown a very intricate organization of exchanges and transfers, and the well-being - not to say the existence - in this country of every individual now may be said to be dependent on the effective working of what has now become a very involved mechanism.

The whole economic organization can, I think, easily be presented to quite young students without elaborate detail in such a way as to give them a bird's-eye view of the whole. The pupils thus can be brought into it by pointing out that each individual has a part to play in the efficient working of the organization of communal living - how some are direct, some indirect. A discussion of typical occupations could be made to bring out the way in which each serves the community, and that for this service to the community each worker draws wages, salary, or remuneration of some kind. This would lead naturally to a consideration of

Money - that it represents the value of each person's service to the community, and has no value in itself except as exhibiting a title to a certain proportion of all the goods and services that have been provided by the total work of all members of the community. Is this not knowledge that all pupils of our schools should have? And is it not knowledge that could be reasonably understood by the vast majority of young people? Such a course could, for example, be made the vehicle for the highest form of ethical teaching. It may be that theoretically economists might be able to criticise such a book as not being absolutely scientific but the professional economists would have overlooked the fact that such a book would not be setting up itself as a text-book on Economics. I have included in a later section a number of extracts which are used in dictation. These are from speeches made by the leaders in Commerce, leaders of businesses carried on in every part of the world. Added to such a course as I have faintly indicated above that would present the student with an idea of how the world had organized itself for the purpose of a fuller life. Formal economics might come later, and its study would be greatly facilitated if the student had a background of such a nature as I have indicated. I believe it is the duty of the school to direct the minds

of its pupils to these things, and I am quite certain that it is not beyond the capacity of young people of thirteen to sixteen to appreciate them. From the very small amount of such teaching I have been able to do I know that young people are vitally interested; they seem to feel that such knowledge is coming very close to their own lives and I would suggest that without such knowledge no individual can really play a proper part in a community life. At the present time boys and girls leave the schools without any idea of the organization of life, or what possible parts they can play in their organization. Constructive thinkers will, I feel sure, arise out of pupils whose minds have been so directed and many of them whose natures are not really touched by the existing type of school work will be encouraged to further study. It is my belief that there is a vast reservoir of untapped talent in our schools. Boys and girls of vigorous independent minds who find nothing in their present subjects connected with life and who take little or no interest in school subjects, but long for the day when they can come to grips with life. Educators are, I think, too prone to consider that the dunce who succeeds in after life is but evidence of the false values placed by the community on service. In many cases, I believe it is due to the fact that the dunce finds in some branch of life outside the school something that supplies that felt inner want. Arithmetic is a subject of such

antiquity in schools that it has entered into every field. For example how often do we find questions such as: The rateable value of a house is £37. and the rates are 8/4d. in the £. for General Purposes, 2/10d. for Poor Relief, and 9d. in the £. for Water. Find the amount of each Rate and the total paid by the occupier of the house. As a general rule such questions become merely exercises in computation and are regularly worked out with but faint idea of what the whole means. How many boys and girls leaving secondary schools today could give a reasonable account of what the Rates are for? Yet all are going to be citizens. Most of them will ultimately be concerned with the paying of Rates, and though many of them will have picked up in ordinary social life some knowledge about them, very few will have a real idea of the 'why and wherefore'. On all hands at the present time we hear great complaints about high taxation and whenever anything is proposed that might conceivably result in an addition to the Rates there arises the usual outcry about the iniquity of the whole affair. I am not now discussing whether or not the criticism in any specific case is justified but how can criticism be made without knowledge, and where at present can such knowledge be acquired? Obviously only from rate-payers who cannot be expected, especially in these hard times, to give an unbiased view of the matter, yet surely these matters should be the common knowledge of all.

It cannot be suggested that a reasonable exposition of how a city is conducted is beyond the powers of the average pupil between fourteen and sixteen years of age, but is any such knowledge imposed today on any large scale? I do not doubt that many teachers will supply some information incidentally, but the pressure of an examination syllabus will preclude it from being undertaken on any extensive scale. I remember some time ago in a class of students of average age between sixteen and seventeen, the question of the remuneration of policemen arose out of a reference in a passage used for dictation. Beyond the fact that they thought the Government would pay him, practically none of the class had any idea on the subject at all. They simply took the policemen for granted - there he was, and there he always had been since they first came into the world. There is a vast amount of what may be termed general community knowledge which ought to be given by the school on such subjects as Local Government; the Organization of Education and how it is paid for; Public Health Services; Courts of Law; Municipal Training; Gas, Electric Lighting, Tramways, &c.; Parliamentary Government and the various Ministries - Health, Agriculture, Labour, Trade &c.; Taxation in all its varied forms - Income Tax, Customs and Excise, Estate Duties, direct and indirect taxation, and so on. "The Organization of Community Life" is a subject that ought to be included in every post-primary school.

The appearance this year of the Board of Education's Handbook of suggestions on Health Education indicates that at last Health Education will soon be taking its place as the first subject in the curriculum of any school - primary or post-primary. In the introduction we find "This edition lays even greater emphasis than the last upon the need for regarding health as something more than a mere 'subject' of the curriculum, and more than mere routine practice of healthy habits. It presents health as an ideal, the inculcation of which is no less important for national life than is that of the ideals of truth, beauty, and goodness." Ultimately no doubt, Health Education will reach its proper status as representing the ideal upon which alone the other three can be built. That it does not occupy such an exalted position at the present time is clearly seen in the relatively poor state of health of the masses of the population. Recently it was announced that practically fifty per cent. of all those who seek to join the Army are rejected on medical grounds, and it is also announced that the tests are not so severe as they were before the War. An under-lying cause may be unfortunately under-nutrition in these days, but that is surely an aspect of health education for no enlightened nation should spend money on any other education if the body of the pupil is under-nourished. One of the first essentials of health education should be the elimination of many of the

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old, dark, unlovely and insanitary schools. These are, however, difficult times, and this is not the place to go into the wisdom or otherwise of holding up building programmes. A greater step, however, might be taken with less expense - the abandonment of all schools on the first of April in each year in each year. I look forward to the time when school rooms and desks that cramp and curb the ever-restless spirits are abandoned at the first sign of summer and all schools transferred to vast camps under canvas in the country at convenient centres not too far away from the town. I believe this one thing would do more to raise the standard of physical fitness and outlook than any other single improvement that might be thought of. All other schemes are palliative. Already we have open-air schools for children who fall below a certain standard of physical fitness, but for that large number who are only C.3. no provision is made. This suggestion is not at all to under-estimate the value of the work done by the school medical service and the vast organization that has grown up, but we ought to go a little deeper down. I realise the tremendous outcry that such a step would evoke, primarily on the ground of expense, but obviously that could only be a matter of organization, for it would certainly be cheaper to feed the school population in such large numbers. Recently we have had ^a the controversy between the British Medical Association and the Ministry of Health over the

*Spreading
on Apr 5
a bitterly
cold wet
day.*

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question of the number of calories necessary to keep a man in good condition, and the relative cost of buying such calories. Many schools have joined in the controversy, and indicated that they can feed their pupils well at a cost which is in some cases no more than that which is considered necessary for the adult, and which is declared by most housewives to be a ridiculously low figure. That it may be so, *Who is to pay?* I have no doubt, but that is due to the small family unit. Where large numbers are concerned, the actual cost per head can be reduced enormously. That ultimately all schools in summer will be held under canvas in the country I firmly believe. Civilization confers many favours on mankind, but if man is to take advantage of these favours he cannot get away from the basic fact that nature intended him for a life of activity in the open air. The amount of misery and suffering that such a scheme would save in after life is almost incalculable. The educational advantages are immense - the experience of communal living; the joy of the countryside and the opportunity for the teaching of biology and kindred subjects; the realisation early in life of the joy of being fit - a joy that a large number of town-dwellers have never experienced. Moreover, much of the work of cooking and cleaning could be done by the scholars themselves, and the training gained therein would be of inestimable value in after life. Many wealthy people endow large hospitals for the relief of suffering - it would be a great step further

if some philanthropist would show the way by endowing camp schools. Once they were in practice on any large scale, the benefits would be seen, and I believe the whole scheme would become a national one.

There has been much controversy recently regarding the introduction of biology into schools. By some it is contended that a thorough knowledge of all the natural processes of the body is a basic essential. This view has been advocated especially by Professors Haldane and Huxley, their view point being that biology is the best subject to introduce the ideal of the scientific attitude of mind. It is, they say, easy to be scientific about something that is remote emotionally, but difficult to adopt a scientific attitude of mind about something that is very close emotionally. It is, however, a common-place that knowledge and right action do not necessarily go together. I believe that for certain classes of pupils and certain schools biology might with great advantage be introduced, and with many state-aided schools direct instruction might prove rather dangerous. In the present state of the body-mind of the pupils they are not in a fit state mentally physically to accept with profit instruction of this kind.

Health education really begins in the nursery school. It may be objected that it should begin in the home - and so it does in well-ordered homes, and in those where

parents/

the parents are themselves health-minded and realise that health is very much a matter of habits inculcated in early life, but if it is accepted that our habits are settled very largely in early life, then it is evident that in those homes where parents themselves have not health habits of a high order the improvement in the children is not likely to be very great unless some other agency gets to work. In this connection I feel it is the duty of the school in the early stages to attempt to inculcate high ideals of health conduct, to make the pupils conscious of the great duty they owe to the wonderful mechanism of the body, the essentialness of cleanliness - hair, teeth and the body generally, the digestive and eliminative processes of the body ought to be insisted on. In the first place these things can only be done by injunction and the definite inculcation of habit, upon which can be erected later a definitely conscious control of the body. That is the aim, but I feel that it is very largely too late if instruction is delayed until all the essential habits have been formed. Thereafter the difficulty of attaining that great ideal of Huxley's of a man whose body is the ready servant of his will will be the more difficult of achieving. Throughout the educational process I think we should keep in mind the fact that it is the duty to impose on the young such habits as are believed to be the highest that the human race has yet attained, and at the same time in other avenues to try to induce what has been called the scientific attitude of mind

the mind that is not the slave of habit, but is able in the light of newer revelations consciously to adapt itself.

As in most subjects of the curriculum there has been much controversy as to the ideal system of physical training. Much of the existing type of training it is suggested is too monotonous. One of the great objections is that physical training is generally undertaken with too many clothes on, and it is often indulged in in an impure atmosphere. It is bad enough to have to be in a bad atmosphere, but to do hard physical exercises in such atmosphere is the height of folly. The greatest need in physical training is an ample supply of fresh air, and it is this that is so often lacking in school physical training. The transfer of the schools to the country in the summer months would solve this great problem at that period.

During recent years Professor L. P. Jacks has been waging a great lecture campaign and the burden of his message may be summarized in the title of one of his books "Education Through Recreation". His creed can be shortly stated as follows. "Man is a skill-hungry animal, hungry for skill in his body, hungry for skill in his mind, and never satisfied until that skill hunger is appeased.

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What a discontented, miserable animal man is until he gets satisfaction for the skill-hunger that is in him. Self-activity in skill and recreation is the summary function of human nature from childhood on." His professed object is to get the individual in full control of his body by appealing to, and utilizing the native instincts. One of the methods he advocates is eurhythmics, which was formerly championed in this country by Professor Findlay. Those who have any experience of the value of rhythm cannot but have a profound belief in the great effect the adoption of such a system would have not merely on the physical well-being but for the point of view of the great harmonising power it has. Rhythm is a law of human life. I have seen the wonderful effects of its adoption in three distinct spheres - handwriting, shorthand, and typewriting. I do not know how far handwriting is taught in schools beyond the very elementary stages, though to judge from the handwriting of pupils who have left school it does not seem to exercise much concern. Rhythmic handwriting has been in use in America for many years, and its adoption in this country would have a two-fold effect - (1) an increase in speed and legibility, (2) the satisfaction of the skill-hunger. The position in which handwriting is attained by the vast majority of young people positively inhibits the exercise of any skill. I am not exaggerating in the least when I say that it is possible in a handwriting exercise based on this principle to get five times as much work done cheerfully

and /

and joyfully as would be done in the normal way.
Fatigue is absolutely eliminated.

The trend of physical training in this country hardly seems to be in this direction. In the "New Teaching" Mr. Guy M. Campbell after quoting Professor Findlay's description of the Dalcroze System concludes: "All this is perfectly true and the cultivation of an aesthetic sense is valuable, but it is equally true that no amount of eurythmics, however graceful and fascinating, will teach a child the best way to jump a ditch or climb a rope, nor does Mr. Dalcroze claim that it does. A system which is to make 'the boy a musical instrument' can therefore scarcely be regarded as of sufficient utility to form a very important part of a national system of physical training." It is a sad commentary that in a choice between the teaching of self-control and self-reliance and the best way to jump a ditch or climb a rope, the opinion of one of the foremost in the ranks of physical training should be heavily weighted on the latter, but as a matter of fact even here the expert is wrong, for if it is one thing that the inculcation of rhythmical activity would lead to, it is excellence of performance, for the rhythmic way is the best way. From the crack of the pistol to the breasting of the tape, the movements of an artist-athlete like Lord Burghley, are all in perfect rhythm.

Educators are neglecting a powerful aid when they regard rhythm as not worth cultivating. The human body demands exercise of rhythmic skill, and its cultivation in the simpler things of life would, I am sure, lead to that harmony of mind which is the essence of all true culture. The teaching of Handwriting to music advocates the greatest interest and enthusiasm. The work done in any given period represents at least five times that done in the ordinary way, and when the pupil is properly attuned, it is possible to write all day at a speed of about 20 words per minute, with the minimum of fatigue. The joy of children so taught is unbounded, and that itself is no mean achievement. The attitude of the physical training expert already quoted is but indicative of a state of affairs which is inherent in an organisation which has to depend on specialists who have not a clear idea of the 'whole' in education. Perhaps the best solution would be the adoption of eurhythmics as an outside activity on a purely voluntary basis. I believe if facilities were offered on any large scale that there would quickly arise a great demand for it, and its cultural value in satisfying a human need, and leading to a harmonious frame of mind, would be considerable.

Health education of which physical training forms only a part would, therefore, be the basic subject

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in the post-primary school, and this would lead naturally out of what had been done year after year in the way of the formation of habits. I believe that children trained in this way would be in a mentally-physical condition, suitable for more definite biology teaching.

SCIENCE

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The history of the curriculum has seen the addition of one science after another to it. From time to time a new branch after much effort on the part of its introducer is added on, and now we may have Chemistry, Physics, Botany, Biology - all on the same syllabus. The position is that each teacher specializes in a very narrow groove, and is naturally full of knowledge and enthusiasm for his own particular subject, and he approaches his teaching from the same point of view. Each subject is taken up and presented to the student in the belief, conscious or unconscious, that the student is going to pursue that subject up to the same standard as the teacher, at least he is given the beginnings of such a course, and no doubt the teacher soon realises that a number of his students are not particularly interested, and, therefore, not very good at his particular subject. These students are for this teacher, poor, and he is thrilled and inspired only by those students who take a real interest in his subject. My contention is that all these subjects, as subjects in themselves, have no place at all in a curriculum of a post-primary school of any kind. They are definitely specialist subjects. This is not to say that no part of the knowledge included in these subjects is suitable for the post-primary school, but that it is manifestly impossible to deal adequately with any one of them.

I was present at a refresher course some time ago at which an expert on history was lecturing on the teaching of that subject. H. G. Wells' book had but recently appeared, and the lecturer denounced him most heartily. Wells, he said, was no historian, and the burden of his complaint was, I believe, that in the book Wells had devoted some fifty pages only to some important epoch. This attitude of mind is typical - and disastrous. The sum total of knowledge is so great that it is impossible for any one mind to have a knowledge of but the tiniest fraction and the duty of the specialist as I see it, is that out of his vast knowledge he should be able to select and edit for the benefit of those whose main interests lie elsewhere those aspects of his speech as might be considered to be the necessary possession of all reasonably educated people. His duty is not to start all his pupils on the road to specialising in that particular subject. He may enthuse some of his students just as some of the other specialists will enthuse others, and in this way all the pupils will have the opportunity of seeing in which direction their own particular interest lies. But the preliminary course - the general course - should start off as the first stage in a long course that finishes in the university. This, as a matter of fact, is very largely what is done in all the science subjects, and in so far as the work is being done for examination purposes, the results are sheer cramming.

I have frequently obtained sets of examination papers of various bodies and tried out the questions on pupils who had taken the examination a few months before. In many cases the knowledge acquired had completely disappeared, although I was informed that the particular pupils knew the answer at the time of the examination. I would therefore suggest that in the curriculum of our post-primary school for commerce students should be a subject which might be termed "everyday science" which would draw its material from all the sciences. Pupils are interested in the scientific elucidation of the common phenomena and these should be explained to them in language that they can understand. Such a course sympathetically conducted would create or increase the pupils' interest in and love for natural things. It is a rather pitiable state of affairs when boys and girls come out of school with little bits of science knowledge which have been 'crammed' merely for the purpose of passing a certain examination. Yet these same students are almost invariably quite ignorant of the main facts in the history of science. It would surely be a much better plan to acquaint young people with the progress of science to give them some knowledge of the epoch-making events rather than a specialised knowledge of relatively unimportant matters. Sir William Bragg gave a talk in October 1933 in introducing a series of talks by Professor Huxley on scientific research. I reproduce part of this talk below, because it illustrates the type of course that

I believe should be given to young people as a course in science. It represents the knowledge that a reasonably well-educated person should have, that is to say a person who is going to take an independent part in the affairs of his country. It also illustrates, I think, in a very special manner the real job that the specialist can perform, and to which I have referred above. If science were taught in the spirit illustrated here it would I think form a very sound introduction to the future specialist as well as giving ground work of knowledge to the non-specialist.

"I am going to ask you to make an imaginary journey with me round the little corridor beneath the seats of the Royal Institution. On a small scale it is rather like the underground spaces of Piccadilly Circus, and it is lined with well-lit show-cases like those of a big store. In these cases are shown the pieces of apparatus which have been used by great experimenters of the last hundred years, particularly by those who have worked in the Institution. Everything that is shown suggests to us some aspect of the big questions we have before us.

We halt before the first case: it goes back to the beginning of last century. There is an old model of a fireplace in it, another of a boiler, a cooking pot and some instruments for measuring heat. They are all that is left of the work of a certain Count Rumford, an American of extraordinary talents who sided with the British during the War of Independence. He lived afterwards in England then in Munich, where he won great honour and was made a Count of the Holy Roman Empire. To scientific men, especially to engineers, he is known for his fundamental work on heat. But as I look, with you, at the relics of his experiments, I do not want to tell you of his researches so much as of the ideas that fired his imagination. For he was one of the first of those who tried to use scientific knowledge in a scientific way in the interest of economy and especially for the relief of the discomforts of the poor. I use the word "poor" in the sense that was common in those days. He wanted to gather together in one place models which would show how all sorts of common things should be made and used. His writings describe, with extraordinary foresight, the modern Science Museum, such as the one in South Kensington, which has recently become so popular. He was particularly

interested in the economy of fuel and waged war on the ill-designed grates and chimneys which filled rooms and streets with smoke. It was that which brought him in contact with Sir Thomas Bernard, another man of great interest from our point of view. For he was the active member of a remarkable body of men who met and worked under the grandiloquent title of a 'Society for Improving the Condition and adding to the Comforts of the Poor.' The very title is illuminating. It was unique in its day: the one Society in London apart from religious bodies which set out to relieve distress by the systematic employment of scientific knowledge. There was certainly plenty to do. There were very few hospitals, and some of those existing had terrible records. Bernard gives an account of the conditions in a little book, "Pleasure and Pain", which he wrote in 1818, though curiously enough, it was not published until 1930. His Society founded new hospitals and charitable institutions of many kinds and strove to correct existing abuses. As might be expected he met with many difficulties which he describes with some humour. Bernard was treasurer of the Foundling Hospital at the time, and with Rumford's help he set the kitchens and heating arrangements in order. But when the same economies were introduced into Christ's Hospital they broke down, because the cook had the perquisite of the dripping and her husband the perquisite of the cinders.

You see, then, that this window in the corridor takes us back to early days of organised endeavour to apply scientific knowledge to the relief of distress. And our minds run on to survey all the work in the cause of health that has been done since then: the innumerable hospitals where every scientific advance has been examined for its possible usefulness, the Boards

of Health and all other bodies which have laboured to prevent disease. No one of us is likely at this point to say that it would have been better if in this direction there had been no search for knowledge and no wish to apply it.

Let us move to the next window. Rows of lanterns of a curious appearance stand on its shelves. They were made by Sir Humphry Davy. He had been asked to solve the problem of the lighting of fiery mines. In the search for coal it had become necessary to penetrate into regions where explosive gases were to be found; and many terrible accidents had occurred. Davy's miner's lamp was the result of a few weeks of experiment, and provided the solution that had been asked for. Beside the lamps stands the photograph of a grateful letter from miners of Northern England: unable to read or write they have put crosses to their names. Others, like Stephenson, were at the same time groping their way to the same sort of solution.

There also stands one of the machines which the small boys turned continually, causing a steel wheel to strike showers of sparks from a flint which they pressed against it. The sparks were not hot enough to fire the gases, but their feeble light enabled the miners to get on with their work. With the aid of Davy's device mining was, and still is, carried on in comparative safety where otherwise nothing could be done. It stands for all those labours which in the past century have aimed at the safety of the mine: and is itself one of the most effective of all those devices. That is good, let us say. But with every improvement in method comes an increase in the extent of the work and in the numbers of the men who live by it. Millions of people in South Wales, in the northern counties and elsewhere have been put in

the way of earning their living. In these times a slump has come the whole effort is thrown out of gear, and we see the pitiful spectacle of widespread unemployment in the mining areas. What are we to say? Would it have been better if the miner's lamp had never been invented and the progress of coal mining had been stayed? Would it be well to take the warning and to stop all such attempts to improve the conditions of working on the ground that a rapid rise in employment may result in a fall to be dreaded?

Here is a window in which there are many things of great interest. A small tube contains a little transparent liquid, which, we learn from the card that lies beside it, is some of the first benzene ever made. A hundred years ago gas for lighting purposes was carried round in cylinders. Curious residues were found in the cylinders after use and Faraday (in 1825) extracted the new liquid and determined its composition. What visions the sight of it conjures up! Benzene is the central figure of organic chemistry. On that chemistry depends in the first place all our knowledge of the materials of the living bodies: all our attempts to understand and fight disease. Industrially, the dye industry hangs on benzene and the substances derived from it. I may remind you that since the War the dye industry in this country has advanced greatly and employs its hundreds of thousand directly, and indirectly ten times as many. And at the same time we may link to organic chemistry all other chemistries, tremendously powerful in these days. Do we wish that chemistry had never functioned? Would we give up anaesthetics, for example? Some of us are old enough to remember the days of our childhood when we parted with our teeth with nothing to help us through: and we wondered how they stood it who had to bear the pain of long and serious operations in the hospital. But

then the same chemistry has given us the poison gases of warfare. 'Sorry, sir', said the auctioneer to the would-be purchaser, 'but if you want the parlour lamp you've got to take the garden roller. They're in the same lot.'

Here, besides the benzene, are some cups and moulds of wood and wax. They recall to me the whole manufacture and use of the submarine cable. I can picture the multitudes engaged in the collection of the insulating materials in the forests and the mines, the preparation of the copper and the steel, the winding and the laying of the cable, and the use we all make of it. The moulds at which we are looking were used by Faraday in his electrical experiments: and it was on his results that William Thomson was able to advise the promoters of the Atlantic cable as to its proper design. Not that Faraday was thinking of cables or telegraphy when he made the experiments: he was concerned only with the electrical laws.

This reminds us of the differences, such as they are, between pure and applied science. Just as we grow in our gardens annuals for our immediate pleasure, and plant shrubs in the herbaceous border to reward us in a few years' time: while with longer foresight we plant forests or give the natural timber the opportunity to grow, so it is with the growth of knowledge. Often we ask for some immediate solution of a problem: and that is particularly true in the industry of the small manufacturer. The bigger man can look further ahead. And when it comes to the advances of science into the unknown, long vision is wanted, for no one knows if any use can be made of what is found. Only governments, universities, or free private enterprise can be expected to give attention to it. Faraday works out the laws of electricity: that is in the background of the picture. The designer looks for the best

form to give to the cable and the best materials of which to make it. That is the middle distance. For instance, the research workers of the Non-Ferrous Metals Research Association have recently discovered an alloy which replaces the lead covering with the most remarkable results in the way of economy. The pure lead covering wore and broke as its loop swung to and fro in the tidal currents, but the new covering is more elastic and in other ways is as good as the old. Lastly, there are the innumerable technical difficulties that occur in manufacture and laying. These are in the foreground.

Let us turn now and look into a window on the other side of the corridor. There is a glass case containing a number of glass tubes. They are the remains of what Faraday used when he condensed certain gases into liquids under the influence of cold and pressure. On this work, extended by others, rests the modern industry of refrigeration. We have learnt how to use cold in order to keep our food supplies from going bad. We have learnt how to bring food cheaply and safely from abroad, being unable to produce it in sufficient quantities at home. If it were cut off, the necessary readjustments would be terribly painful. Undoubtedly, however, this foreign supply keeps down home prices and makes it difficult for our own growers to earn a living. How far ought we to go with our efforts in this direction? It was stated recently that the avoidance in the waste of fruit during its voyage from South Africa to England amounted to one whole shipload in the year which improvement was due to research into the right conditions of cold storage. Is this a good result or a bad one? And this reminds us of

many such perplexities. Taking the world as a whole it seems impossible to use all that is produced. When the 'Marquis' wheat was invented in Canada, vast regions were thrown open to profitable wheat growing, and great numbers of men pushed forward to take advantage of the fact. Ought we to go on trying to find new wheats now that farmers cannot find a market for what they have? Will the improvements in the refrigeration of meat on board ship and the consequent increase in imports press still more hardly on our farmers? Can our growers find advantages to be taken of their home position, which may turn the scale in their favour? What a number of difficult problems present themselves!

Next to these old pieces of tubing are others shaped like the letter V: little pieces of platinum at the end of copper wires are inserted into both sides of the V. They are tubes which Faraday used when he worked out the laws of a process which most people know by the name of electroplating. It cannot be denied that this is an extraordinarily useful business, and that it employs great numbers of men. We should be very sorry to be deprived of it. There are other things of interest in this window, each with its story to tell, but we must move on. So we come to the most dramatic of all the objects in the show: the famous ring of iron wound with copper wire which was the foundation of all electrical engineering. So much was said about it two years ago that little need be said about it now. We will remind ourselves only of the vastness of our modern uses of electricity. It seems to me to be a very significant fact that the electrical industry, born so lately of our discoveries and inventions, should be so active, should give so much employment, and be so much employed. To my mind it fits in with the idea that we are all happier and better when we strike out continually on new lines. Every good workman loves

an occasional new tool and goes to his work with fresh interest.

But now we must move on quickly. Here is a window showing among other things a row of little flasks, sealed up to keep the liquids which they contain from contact with the air. Sixty years ago, John Tyndall filled them with broths or extracts of various kinds of meat and game. He wished to show that these would keep indefinitely if pure themselves, and if the air in contact with them was pure also. They look quite fresh still, with the exception of one or two. Tyndall insisted that in ordinary air there are minute particles, which we now know as bacteria. Those who had argued for the spontaneous generation of life had not been careful enough. They had allowed air laden with bacteria to get into touch with their broths. It is interesting to note that these investigations impressed Tyndall with the value of pure air. He found that the air at Haslemere and Hindhead was very pure, and built himself a house there: and many followed his example.

And now in our mind's eyes a wide vista spreads itself before us, opened up by this and other pioneering investigations. We have learnt the tremendous importance of this invisible life to our national health, to our food, to agriculture: we recognise some bacteria as friends, some as enemies. Deadly epidemics have been stayed or prevented by such knowledge. Shall we wish we had been kept in ignorance? Have we allowed populations to grow too fast by removing the plagues that thinned them? And especially have we kept alive many who would be better dead? We must try to make up our minds on these points, and all that Mr. Huxley will have to tell us will be very useful.

A few steps more and we must bring the little tour to an end. Of all the objects left to be considered we must be content with two. Here is a little collection of apparatus used by the late Lord Rayleigh in his work on accoustics: metal discs of various forms, whistles of so high a pitch that very few, even of the youngest, ears can hear them. Rayleigh's work with that of others came into use during the War where apparatus had to be devised which would listen under water for the noises made by submarines, and on land would help to detect the whereabouts of aeroplanes and guns. Since then the importance of sound and its laws thrusts itself upon us more and more, in the long neglected design of halls fit for speech and music, in the construction of telephones and of loudspeakers. The control of sound is peculiarly interesting just now, because so many complain of the torment of noise in town, and out of town, and of the want of privacy in the new piles of flats.

And in the last window of this corridor is the history of the vacuum flask which Dewar invented to keep his liquid air boiling away. The first rough attempts are there, and in succession are the gradually improving patterns leading up to the present familiar form. I do not think we should like to smash up all our vacuum flasks. either those of us who make use of them in daily life or those who find them invaluable in the laboratory and the factory. But it might on reflection be possible to find a reason why we should be better without them.

LANGUAGES.

Every student who has been considered capable of taking up a post-primary course on the commercial side should be able at least to enter upon the study of a foreign language. There have been apparently great strides made in recent years in the teaching of foreign languages, though the tyranny of the system still keeps the examination on the same old lines. This means that the subject is presented from the wrong point of view, for I believe that many students who might make good progress with a foreign language have their interest and enthusiasm killed at the outset. In no subject is the written examination such a tremendous handicap. True, there is an oral in most examinations now, but in my own time it did not seem to have a very great effect on the result, and so far as I am able to gather it does not seem yet to have attained much greater importance. The written examination is supreme, and yet language should primarily be acquired by the ear, and not solely by the eye. Of course a proper combination is essential, but it would evoke the pupils' interest to a far greater degree if he were at the very outset plunged straight into conversation. In this connection far too little, I am sure, has been made of the gramophone. The constant repetition that is needed to learn a foreign

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language cannot be attained in any other way. It is impossible for the teacher to reproduce it, and the utilisation of the gramophone for this purpose would enable the teacher to crowd into a very small portion of time what actually takes in learning the vernacular many years. There is a large number of students who if they found that they were able to talk a foreign language, and to realise that the language was a living thing used by real people and not merely another excuse for setting examination papers, then I believe a large proportion of them would be encouraged, in fact would be eager, to enter into the study thoroughly. There is no doubt, however, that many estimable young people do not have a flair for languages. As things are at present it is impossible to get a School Certificate without having a language, with the result that the study of the foreign language is carried on long after the pupil has ceased to take any active interest in it, and his only purpose in carrying it on is to get sufficient knowledge to pass the particular examination. One great essential, in my opinion, is the abandonment of this rigid course system - this idea of the balanced curriculum. It exists in the minds of the organisers, and not in the minds of the pupils. If a student has no natural aptitude for learning languages, then after that fact is clearly determined, he should give up the study and devote his time to something else. On

the other hand, those students who have a natural aptitude for the learning of languages should specialize in them, and be able to give up some of the other subjects ^{as soon} ~~so long~~ as they have acquired a sufficient knowledge of them. By sufficient I mean simply that knowledge that is needed for community living. As I shall try to show later in the section on Mathematics, the amount of that subject necessary for community life is very small. One of my main criticisms against the present state of affairs is that every teacher starts off as if the pupils were going to get all their cultural education from his subject. That is manifestly impossible as the student takes all the subjects in the same way, but if after a certain time it is evident that his bent lies in one particular direction, then it should be the business of the school to allow him to derive all the educational and cultural benefit he can possibly gather out of those subjects. It might be possible, for instance, in languages, to concentrate in one school in a town - depending of course on the size - all the students who are really interested in languages, and they could have a course of languages as the pivot. It might be possible to eliminate for those students of fifteen or sixteen plus, Mathematics, except what arose out of the study of the language. The performance of simple arithmetic work in the foreign language would take care of their basic needs in this direction. and at the same time allow the

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study of the foreign language to become a study of great value. If the students really interested in languages were thus grouped at say from fifteen plus or sixteen plus to seventeen or eighteen efforts might be made to allow them to travel abroad for some time. It would not be difficult to arrange for a French or German boy to come here in return for hospitality in France or Germany. One of the main complaints of the Committee on education for salesmanship was that our present system of education did not produce sufficient men with a knowledge of foreign languages. "Until we change this outlook we shall continue to lament our export trade. That is until we can send our own representatives who are known to us, trained by us, and without interest in the foreign country, of which, in the case of local representatives we know nothing until it is too late, we shall not develop our export trade as much as we might."

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MUSIC AND ART.

I have not the space to go very deeply into these subjects but if I do not devote much space to them, that fact is not to be taken as an indication of their relative importance in the suggested curriculum. Music in the form of community singing should be included in every post-primary school. Here is one subject where I think the services of the B.B.C. might be enlisted. Those schools who have taken the course under Sir Walford Davies must have found it a refreshing relief from their normal work, but I do not think that many secondary schools would be included among the listeners. After all, music is not for the average student a subject in the School Examination and it is not an exaggeration to suggest that that is a measure of the importance of the subject. Both Music and Art, I think, are subjects that, beyond a certain stage, ought not to be taken by the mass of the pupils together. I have for a long time felt that the organisation of a post-primary school should involve a certain amount of evening work, and that that evening work should consist of optional subjects to be taken according to the taste of the student. The scheme that I have in mind is that the mornings should be devoted to work on the main subjects of the curriculum, that the afternoons should as far as possible

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be utilised for physical exercises and games, and that students should be free to take up at school in the evenings such subjects as Arts and Crafts, as they feel most suited to their needs. Here, for instance, the commerce student might take up such work as Music, Physical Training, Dancing and Eurhythmics, Handwork, Woodwork, Dramatics or Art. I believe that at least two nights per week from, say, 6p.m. to 8p.m. could profitably be taken up with these subjects. Much longer periods could be taken and the amount of ground covered in four hours a week would be very considerable, much more than in the ordinary way. In these courses the students would not be a mixed class but would be taking a particular class because they preferred to spend their leisure time in such a way. This represents, perhaps, a radical departure from all pre-conceived ideas of what a school should be, but I do feel that to shut the school down at 4 o'clock in the afternoon after having provided students with book homework is not calculated to make the best of the time devoted to education. The enormous success of the Boy Scouts and Girl Guides is a plain indication of the need for some work of this nature, and without in any degree criticising the work they are doing I feel that they are not in a position to offer such wide facilities as are the schools. Yet the schools are still hampered by the conception of education as considering only of those things which can be brought within the compass of a two or three hour examination paper, the answers to which must be written.

Work in any subjects like Art and Music need not be post-school activities. Those who are gifted in these directions can easily proceed quite early in life to an intensive study and practice, and it should be quite obvious that even within a relatively narrow class as measured by school examinations, there will exist many varieties of tastes, aptitudes, and gifts and these varieties can best be met by a system of voluntary work outside the ordinary school routine. The classes would be voluntary only in so far that the student could choose which course he wished to attend. Enough courses would have to be provided to meet recognised needs. Here would be the opportunity to point out and inculcate - each art or craft in its own way - the highest ideals so far conceived. This would undoubtedly have a great reaction on the world of commerce when these young people grew up and took their places therein. Too long, for instance, has art been considered as something in a gilt frame. Art enters into all things of daily life; it is not apart from life, but of it, and the school would have, I believe, a great opportunity in organizing voluntary work such as I have described.

GEOGRAPHY AND HISTORY.

I have put these two subjects together because in many regards the problems arising out of their teaching are similar. No other subjects are in such great danger of being badly treated by the specialist. Geography has its roots in many other sciences and it is a study which without doubt can give a cultural education of the very highest value, but to the ordinary student between thirteen and sixteen it is but one of many subjects in the curriculum and due regard must be had to the quantity of knowledge that a child can assimilate. Consequently while physical geography, for instance, is a most essential study to the complete understanding of, say, the economic aspect of geography, yet it is manifestly impossible to treat the subject in extenso. It is the duty, therefore, of the specialist just to supply a sufficiency of that knowledge to explain clearly the matter in hand. I have known students whose knowledge of the physical geography of the west of Scotland was profound, but these same students were quite unable to give a reasonable answer to the question: "How do you think the million people in the city of Glasgow earn a living?" The question was oral, and apart from a mention here and there of coal and ship-building, the class could contribute little or nothing. Even the coal and ship-building were felt to be intangible things. They

never seemed to relate them to the actual everyday working of people. These same students, were, however, full of igneous rocks, and such like matter. No one would deny that there are certain fundamental ideas that must be got hold of as a basis for further knowledge, but to the young student whose life is going to be spent in the commercial world such knowledge is futile, not in itself, but from the point of view that it can only serve as the basis of further knowledge, and if there is no time at school to pursue that further knowledge, then the preliminary study is, to a large extent, wasted, for having nothing to which to attach itself, it gradually fades out of the mind.

The type of Geography that I would suggest for Commerce students, is that which would give them a general knowledge of the whole world, and the way in which each country contributes to the common good, and why it does so in its special manner. There is, I believe, still too much attention paid to detail in this connection, and not enough to under-lying causes. The information that is given to students is still too much in statistical form, or in mere narration: exports rubber and tea. This knowledge can be linked up by a very short consideration of the particular kinds of climate suitable for the growth of tea or rubber, and such basic information helps to organise geographical knowledge, and does not leave it a mere matter of bits and pieces. I have found most students from secondary schools aware that we import a large amount of our wheat supply

and some of them still insist that much of this comes from the United States. This is obviously due to the use of out-of-date text books. Too seldom, however, do they know why we import such a large proportion of our wheat supply. I have often told a surprised class of students that England produces more wheat per acre than any other country in the world, but at a much higher cost, due very largely to the need for fertilisers owing to the long time the country has been under cultivation. In a later section I have included selections from speeches used in shorthand dictation, and from a perusal of these it will be seen that a vast amount of general geographical knowledge can be had in this most interesting way. We roam the world; we discuss the problems of each country in the world, not in a matter of fact way, but in a human way. We worry over this aspect and that aspect and see the whole world at work, and get an insight into the problems affecting the world. This, I believe, is a most important aspect of that general education which, I think, it is the duty of the school to provide. It is not so necessary to impart detailed knowledge as to give the pupils a general idea of how we go about the business of living; the problems that arise in the course thereof. One aspect may appeal to one student, and another aspect to another, but we should open their minds to the problems that exist, not stuff their minds

with more or less unrelated knowledge so that we may thereby get our pupils to go out into the world with enquiring minds. They are so interested in life, and how it is conducted, and human geography, or economic geography is a subject that will help them to understand in a measure how the world goes round.

In this connection I believe the cinema could be of great benefit, not so much in the way of direct and formal lessons, as in the portrayal of stories whose locale is laid in foreign lands. The stories might be simple and straightforward, but the interest is derived in the scenes, actions, customs and work of other people. The Grand Tour of Europe used to be a necessary part of a good education for the selected few, but now the Grand Tour of the World is possible to all. The commercial world is far ahead of the educational world in this respect. Commercial people realise that humanity has a powerful instinct of curiosity. Cadbury's have recently shown a film about the gathering of the cocoa bean, and the whole film was so well done that the surprise of the audience was audible when at the end the name of Cadbury's was brought in. This was an educational film in the best sense. That it was an advertisement is merely incidental from our point of view.

The difficulty of what to teach is even more acute with History than with Geography. I have already suggested, for instance, that a slight acquaintance with the history of science might have even more value than an acquaintance with test-tubes and other apparatus, but history impinges on every subject - there is history of art, of education, and of a hundred and one other things. Out of all the wonderful historical knowledge that might be imparted, traditionally we give our young students the history of kings and queens and their various wars, and if the study is taken very far, the student is faced with such problems as: Discuss the foreign policy of Pitt. My belief is that many of the subjects studied in History are quite beyond the ability of young people, and all that they can do is to take in, at the best, what is given to them, and return it, or as much as they can. The field is so vast that the whole matter becomes a great cram.

The conflict between nationalism and internationalism is very acute at the present time. How far should we try to imbue the pupil with patriotism, and how far attempt to give him the international outlook? While undoubtedly the latter is the ideal, there is no doubt that it may be ^a dangerous if one nation were to advance a considerable way ahead of the nations of the world. The difficulty is further complicated by the fact that

economically, the world is already a unit: politically it is a conglomerate - not even a melting-pot. For the student leaving school at sixteen or thereabouts it is obvious that all that can be given him - to use an expressive Americanism - are the high-spots of world history. He should, I believe, have some knowledge of world history; the study of Geography can be a study of world history, in some degree. He should have some acquaintance with ancient civilisations - not so much their wars, but with their organisation, their ideals, for there should, I think, run through the whole of history the idea of the gradual rise of the common people from slavery to their present condition. Side by side with this might run such ideas as the effect of science on material welfare, and how different in a material sense is life today, when compared with even a few hundred years ago; the history of the growth of towns; the division of labour; the rise of traders; the birth of co-operation, and the public utility companies - electric companies and even the B.B.C. History comprises all these subjects and most of what I have referred to is general knowledge necessary adequately to understand conditions appertaining today.

The introduction of such topics as I have indicated would naturally mean the elimination of much that passes for History at the present time - "1066 and

all that". How far the present history-teaching contributes to the perpetuation of the war mind, is too difficult a subject to discuss here, but as each country presents the same set of facts from its own point of view, and if young people of each country grow up unacquainted with the point of view of the young people of all other countries it is obvious that in adult life they cannot look at the problems that arise through the same spectacles. Modern psychologists are now emphasising what the Church has always known - that those who control the child, control the man. The ideas and ideals imbibed in early life profoundly affect the outlook of the man, and it is only the unusual thinker who is able to break away and consider problems rationally, casting away prejudices that have been acquired unconsciously. This is evident in the members of the same nation brought up in different schools and environments. How much more then does it exist in nations? These are problems for the history specialist whose delicate task it is to select out of an almost illimitable mass of facts just those items that will provide his pupils with the essential background properly to appreciate the present.

COMMERCE, BOOK-KEEPING AND ACCOUNTANCY.

Traditionally book-keeping has always been the one subject associated with training for commerce. When the uncle of Warren Hastings died the young man was taken from school and put to a commercial academy to learn book-keeping and commercial arithmetic with a view to his taking up a clerkship in the East India Company. Times have indeed changed since then when a knowledge of book-keeping was a sufficient pass-port to commercial life. Later on the introduction of the type-writer made it necessary for would-be aspirants to commerce to add shorthand and typewriting, and in the minds of many educators today the addition of these three tools to the existing curriculum is what they conceive to be 'commercial training.' Today, however, the introduction of machinery and the growth of large-scale business mean that each individual is only concerned with a very small part of the total book-keeping and accountancy with the result that the more or less mechanical working out of an exercise, apart from incidental knowledge gained, is no real training for conditions as they now exist in business. I would stress the subject 'Accountancy' rather than book-keeping though I do so with some diffidence for to the professional mind that **term** connotes something very difficult and very advanced. Nevertheless a person with a knowledge of

accountancy and the outlook of a teacher can extract a great deal that is worth while from the subject and I would suggest that there is great educational value to be derived from the appreciation, for instance, of the exact nature of a balance-sheet. I realise that there are many book-keeping students who are able to get out, in the approved manner, both balance-sheets and profit-and-loss accounts and yet who have never been able to appreciate the precise and fundamental importance of the difference between them. That arises from the professional element in the teaching of this subject for such teachers are obsessed with the idea of getting the work done arithmetically correct rather than with the inculcation of ideals. I have got something to say elsewhere about the doctrine of formal training, the transfer of ability gained in one subject, to another. The fundamental mistake, as I see it, and despite the famous names associated with the destruction of the theory, is that a subject has always been looked upon ~~as~~ having but a one-fold value - the knowledge to be gained. A subject, in my opinion, may have a two-fold or a three-fold value depending on the manner in which it is taken and the opportunities that are afforded ~~for the~~ inculcation of ideals. In accountancy - simple accountancy - it is possible to place before young

students [?]ideals of exact thought which I am sure they are quite capable of appreciating and from which they can greatly profit. Let us consider for a moment one small item in accountancy - depreciation. It is possible to deal with this in exactly the same manner as most of the theorems are treated - a mode of procedure to be learned. As a matter of mere knowledge it has a certain value. Link it up with the ideal of truth and accuracy and its value is transformed. In the history of post-war trade there are many examples where those in authority have gone to prison for falsifying balance-sheets and almost without fail the mode of procedure has been the under-estimating of the amount of depreciation. In one celebrated case excellent profits were shown though in actual fact not only were there no profits but the losses ultimately were sufficient to wipe out the whole of the capital of the company concerned.

There is great difficulty in exhibiting clearly the value of such teaching because of the fact that the number of people with the required knowledge and the mind of an educator is very small. However, the opinion of Sir Josiah Stamp should carry great weight. Here is what he says:-

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"Every subject in your syllabus has cultural value - yes, even accountancy, which at first sight appears to be a technical manipulation of figures according to an approved plan, without any background of humane or philosophic value. I would contest this view strongly. No active mind that has mastered the real difference between a balance-sheet and profit and loss account can fail to carry that relation into the innermost reasoning of all human interests, not even excluding religion. I would indeed divide men into two classes, those who have a balance-sheet view of life, and those who have a profit-and-loss outlook, the difference between a view of life as a state, or a process, the view of society as attainment at a point of time, or as a movement of progress in time, and this difference of view will come out everywhere - in economics, as a contest, for example, between what seems at present the most advantageous division of wealth, or a division which will have a maximum dynamic future effect; in social theory, in the balance between present humanitarianism and future biological improvement. The technical sub-divisions of the accountancy idea, in debentures with a small first charge and no risk, and ordinary capital with risk and glorious gains, of depreciation and obsolescence allowances as charges against current surpluses and enjoyments - these and many other accountancy analogies are fruitful as the warp of a thinking mind."

Once get rid of the professional outlook and substitute for it the educational outlook we can teach these matters to young people even under sixteen years of age with great profit. Here is one other illustration. One of the ~~divisions~~ of book-keeping and accountancy concerns itself with Consignment Accounts. These Accounts deal with the situation in which a firm exports goods to a foreign country but no sale takes place at the actual time of the despatch of the goods - the place of storage, as it were

is merely transferred. To get students to appreciate the exact significance of the necessary entries to be made ^{is} ~~if~~ a considerable advance in exact thought. Moreover it is easy to imagine the opportunities that exist in this connection for a teacher with the requisite knowledge, sympathy, and imagination. Such a lesson can be, at the same time an exact and thrilling lesson in geography and this is a type of lesson I know from experience is 'absorbed' by young people. Here again there is no arid statement; exports, iron and steel goods. On the contrary the student is dealing with actual export and if at the same time the use of the Bill of Lading and the Bill of Exchange is explained in a practical way the value of the lesson is enhanced. We can get down to the docks in imagination and see the skipper giving his receipt for the goods taken on board, the Bill of Lading, and we can see the Bill of Exchange and the Bill of Lading speeding across the seas by mail-boat and arriving at the destination before the goods and we can see the agent in the foreign country getting a good 'acceptance' for the Bill of Exchange before he parts with the title to the goods - the Bill of Lading. All this is geographical knowledge of a worth-while nature and the recording of the transaction, if dealt with sympathetically, forms a training in exact thinking and the expression of exact thought. Educators are missing a subject valuable in many aspects to those students who are going into

the commercial world. I realise the circumstances are very difficult. At the moment we have the teachers with the proper attitude of mind and no knowledge of the subject while on the other hand we have 'teachers' with the knowledge of the subject and a deplorably narrow attitude of mind. Well-meaning controllers of commercial education have brought in professional accountants as teachers. So far as their students are studying the subject from a professional point of view the results may be quite successful but from the point of view of general education the results in the main are not good. There is, however, great hope that once such a subject is introduced there will gradually arise a body of teachers who will treat the subject with the sympathy and understanding its importance deserves.

From what I have said it will be obvious that I am not in any way an advocate of a narrow vocational type of training. No specialization is possible at school before the age of sixteen and very little after that age unless the student is actually engaged in a particular line of business. What is necessary, however, is a training in exact thought and expression using the facts of commerce as a background.

Earlier I called the attention to the vast amount of knowledge that is left out of account at present and I suggested the introduction into all post-primary schools of a course which I called the 'organization of community life.'

Arising naturally out of this commercial students would have their minds directed to these aspects which particularly concern the business world - banking, insurance, post-office, the organization of businesses, rationalization, amalgamation, the appreciation of simple concepts such as net profit and gross profit &c. These subjects are frequently included under one title such as 'commerce' or 'general business knowledge.' Perhaps a single question from the examinations for the Junior School Commercial Certificate of the Royal Society of Arts will best illustrate the content of such a course; What do you understand by Commerce? State its purpose and indicate how the book-keeper in a merchant's office, a bank-manager, and a post-man help in the attainment of this purpose.

The above subjects, with the addition of English and Mathematics, would form the basis of an education which, being meaningful as supplying the real and felt wants of the pupils, would have a far more lasting effect than that gained through the traditional curriculum. I have left Mathematics and English to later sections because I think they require a radically different treatment from that traditionally given. The gradual change from the old classical curriculum has taken away a great deal of real English training which it is necessary to replace.

THE TEACHING OF ENGLISH 1.

Summary. **Speech Training:** it is suggested that hitherto this subject has been practically neglected in schools. At the present time differences in speech perpetuate class distinction. The suggestion is made that merely to take over the science of phonetics and call it speech training is not to achieve the desired result. It is impossible to go into all the refinements but there are certain broad general principles at which we ought to aim. The Departmental Committee on the teaching of English advocated the use of a phonetic code. It is suggested here that the International Phonetic Code is not suitable for speech training and a new code is put forward. This has the merit of being in daily use.

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One of the characteristic marks in the history of education has been the disinclination to change, and when it is remembered that education in the form we know it today is not really fifty years old, it is not to be wondered at that education lags a very long way behind the needs of the times. It will be salutary if at the outset we consider what a change has come over the economic organization in the world during the last hundred years and more especially during the last twenty years.

One of the most fundamental changes in the organization of life in recent years is the practical annihilation of space and time. London is now almost as near to New York, so far as personal contact is concerned, as it was to Newcastle in the pre-railway days. So far as speaking is concerned, the two places are practically equi-distant, the only consideration being one of expense and in these days of huge amalgamations, with capitals running into several millions, this expense is relatively very small.

The whole world is shrinking, and despite present-day nationalistic tendencies, will go on shrinking. We wake up in the morning, turn on the radio, and listen to a description of a cricket match before the players have had time to change from their flannels; and the match was being played while we slept, twelve thousand miles away.

The contrast between this state of affairs and conditions obtaining only a relatively short time ago indicates what an enormous revolution has taken place. The educational machinery, were it ever so adaptable, could hardly keep pace with such astounding changes.

The economic ideal - at present held up, but only temporarily - whereby every country produces that which nature has best endowed it to produce, has produced also an immense revolution in the ways and habits of the people.

Many of the consequences do not concern us here. The aspect we are concerned with is that now-a-days it is quite rare for a person to have been born, lived, and died, in the same area. At least half of the people I know intimately in Newcastle are not natives even of the surrounding district. That may be exceptional, but it is an obvious fact that no longer is the speech of his surrounding district sufficient to carry a person through life, even in such a small country as Great Britain. The smallness of the country is, perhaps, deceiving as, owing to the relatively long history and development during the times when communications were poor, there are possibly far more dialects in this country, proportionate to the mileage, than in any other country in the world. When a person was born, and lived, and died in the same

area, it mattered very little indeed what language he spoke, so long as he spoke a language - and he could do no other - that was understood by those around him.

"Universal intelligibility" simply meant intelligibility in the areas in which he lived.

At the dawn of public education in this country, the only possible organizers were people who had been brought up in an atmosphere where good speech - or at least acceptable speech - was absorbed in their own home life, and, as they were drawn from the governing classes, obviously anyone wanting to 'get on' had to absorb that style of speech, or fail in his aspirations. Consequently, there never has been any real attempt to consider Speech Training as a school subject at all. In his book "The Psychology of Effective Speaking" just published Professor Pear says:- "Yet in English schools at present, with few exceptions, children are not taught to express their thoughts in spoken English with ease, precision, and in such a way as not to offend hearers who belong to different social or geographical communities in the same countries."

THE RESULTS OF THE NEGLECT OF SPEECH TRAINING.

The results of the neglect of speech training in our schools are two-fold. The first is a social one.

In this country we have brought about an elaborate system of schools - from the elementary school

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right up to the 'resort of the elite', Eton and Harrow, through an almost infinite number of gradations, and each gradation looks down upon the one immediately beneath it. It is a peculiarity of the English character that the first additional expense of a man who has reached an earning position higher than that of his father arises with the sending of his children to a more expensive school.

A greater social prestige, of which the veneer of speech is but one aspect, has become the great magnet. The result of this has been to nullify in large measure what ought to be the effects of education. Pupils of the public elementary and secondary schools, however clever they may be, tend to become fixed permanently in the class into which they were born.

With the rise of popular education many of the best minds have been put to work, with the result that possibly in the infant department of the Education Authorities' Schools the training of young children is much sounder than in the most expensive private school. Without any doubt the work done in these departments is much superior to that that can possibly be accomplished in the cheaper private school, and yet many estimable people are deterred from sending their children to the public elementary schools because they are painfully

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aware of the defects of speech in the products of the elementary school. That this fact is well recognized is shown in the Departmental Committee's Report on the teaching of English in England:-

"If the teaching of the language were properly and universally provided for, the difference between educated and uneducated speech, which at present causes so much prejudice and difficulty of intercourse on both sides, would gradually disappear. Good speech and great literature would not be regarded as too fine for use by the majority, nor, on the other hand, would natural gifts for self-expression be rendered ineffective by embarrassing faults of diction or composition. The second cause of division amongst us is the undue narrowness of the ground on which we meet for the true purposes of social life. The associations of sport and games are widely shared by all classes in England, but with mental pleasures and mental exercises the case is very different. The old education was not similar for all, but diverse. It went far to make of us not one nation, but two, neither of which shared the associations or tastes of the other. An education fundamentally English would, we believe, at any rate bridge, if not close, this chasm of separation."

It is another example of the vicious circle. If only we could get into the ordinary elementary schools a larger proportion of the children of the country then there might possibly be a chance that the speech of the whole might sensibly improve. But, as things are at present, it will be impossible to get a larger proportion of the children into the elementary schools until the speech of the children already in these schools improves. The very real fear of those parents who have some regard for the speech of their children is that they would very soon be talking like the rest of the school.

A favourite subject of the magazines, in recent years, has been the failure of democracy and the present organization of many countries - and those not the most backward - tends to support that view. But democracy never has functioned, and it appears to me that part of the trouble is just that democracy is becoming aware that it has power, but that it is too uneducated at the moment to use that power wisely. The great hope of democracy - which is tantamount to saying the great hope of the peoples of the world - is that education will sufficiently advance before some irremediable disaster overwhelms the world. One of the first essentials is the elimination of class distinctions, and one of the main barriers at the present time is the barrier of speech. The schools, hitherto, have taught everything else but speech. The study of the English language has split up into two parts and one of them has been rigidly excluded from the schools. But to quote again from the Departmental Report:-

"If the teaching of the language were properly and universally provided for, the difference between educated and uneducated speech, which at the present time causes so much prejudice and difficulty of intercourse on both sides, would gradually disappear."

But note the contrast that is here made between 'educated and uneducated speech', and yet there is no doubt that even our secondary schools are turning out yearly thousands of students with the label of 'educated' in the

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shape of a School Leaving Certificate, while their speech can only be classed with the uneducated. It is moreover, a tragic circumstance that one of the few avenues open to them is the teaching profession, and where is the hope of improvement in that?

The second result is a personal result, and being personal, perhaps the motive of self-advancement may make more appeal to the individual. Over and over again in the advertisement columns of newspapers, we find demands by individual firms for staff with the tag at the end 'public school boy preferred'. Here it is that the product of the State schools finds himself labouring under his greatest difficulty. Although, no doubt, of recent years there has grown up a desire on the part of many of the largest firms to have boys with a Matriculation Certificate yet I am assured that this demand is not so much a desire to get hold of boys of excellent education. For many years now the number of boys available has been much larger than the number of jobs and the demand for a Matriculation Certificate is but the putting up of a first bar. This enables employers to weed out at one blow a very large proportion of the applicants. Moreover, this demand is made up in the main by large-scale employers, such as banks and insurance companies - businesses in which the work is very largely of a clerical nature, and in which for the most part there is no hope for outstanding

distinction. I do not mean to suggest that the professions of banking and insurance do not need or do not demand men of the highest calibre but that in the nature of things both professions carry a very large proportion of what one might call rank and file who are doing work of a more or less routine character - work that calls for little or no outstanding ability. This, of course, is not a problem that is confined to these businesses, but in other spheres so far the remuneration for the work of a routine character is not so high.

Not so long ago the Principal of the Newcastle Municipal College of Commerce gave an address to the local Rotary Club at their weekly luncheon, and in the course of this talk mentioned, quite pardonably, the success of his students in examinations. In the subsequent discussion a very prominent local banker spoke of the very many fine fellows he knew in business, fellows who could never pass any examinations, but who, nevertheless, were exceedingly good in business, got on excellently with everyone with whom they came in contact, and who were generally very desirable associates. The point he did not make is that there are in his own and in analogous professions many positions that do not call for much more than an ability to talk pleasantly, and a capacity for getting on with those whom one meets in business. In

other words the teaching of the elementary school and the secondary school goes for naught against the ability to talk pleasantly.

From the larger point of view, the first result, the perpetuation of class distinction, is of course the most important, but it is the other one which will enable educators to attack the problem by appealing to the desire for self-advancement.

WHAT SHALL WE TEACH?

So far so good! I will consider that we are agreed that it would be excellent to include definite Speech Training in our schools. What then shall we teach? Here enters the very thorny problem of standard English, variously referred to as, public school, standard, accepted standard, received English, southern English, and so on. Recently we had the Member of Parliament for the pottery town of Hanley complaining very bitterly that Sir Samuel Hoare referred to him as 'The Right Honourable Membah for Hanlah'. Now the first word, Member, is the very natural extension of standard English, but to pronounce ^aH~~an~~ley as Hanlah shows quite clearly the extreme trend of standard English and, mark you, Sir Samuel Hoare is a 'double-first' in History and in Classics, and a 'double-blue', and he is frequently mentioned as a future Prime Minister of this country.

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Although, to use an expressive Scottish word - there is no English equivalent that fits - I cannot 'thole' the exaggerated form of standard English, I propose to try to take a very broad, and if possible, statesmanlike view of the matter.

Skeat, we are told, identified thirty-nine different dialects in the British Isles, and a person who has only one dialect is very unlikely to be able to understand a person who is in a like situation but with a different dialect. In his very lively and entertaining book "Breaking Priscian's Head, or English as She is Spoke", ~~J. Y. T. G. P. R.~~ Greig says that there are two hundred Million people speaking English in the British Empire and a similar number in the United States and countries attached thereto. If we add to the thirty-nine dialects in the British Isles the very large number spoken in Canada, the United States, Australia, India, South Africa, we must get an enormous number of different ways in which the English language is being spoken. My work has brought me in touch with a large number of natives of Norway, Sweden, Germany, and France - students over in this country to learn English. All of them are of one accord and, as one of them, a young German lady, quaintly put it, "You can learn French; you can learn Danish; you can learn anything; but you must learn English. Unless you know English you are no good in business."

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In the Departmental Report again, there occurs the following interesting section:-

"At the request of the Northern Peace Congress which met in Stockholm in 1919, the Northern Peace Union addressed an inquiry to representatives of countries where none of the three great languages (English, German, and French) are spoken, as to which was in their opinion, the most suitable language for universal use. Fifty-four replies were received. Of these, one was in favour of German, eight of French, one of Latin or Spanish, five of Ido or Esperanto. No less than twenty-nine, a majority of the whole, were in favour of English, and the report of the inquiry concludes: 'If English is to become the international language, everybody who wishes to learn it must be given an opportunity. It must be taught in all the schools of the world - optional in elementary schools, and compulsory in the higher schools.' If this is a measure of the prestige which the English language possesses abroad, it surely merits more attention in the schools of England, if only from the point of view of a practical asset. English children, required by law to attend school, are surely entitled to be taught, in a scientific and effective way the accepted speech of their own country."

Sir Richard Paget, in his book "Babel: The Future of Human Speech" says:-

"If the language were improved without altering it so much as to make the classical form difficult to understand, English would, in all probability, become in a relatively short time the universal language of this planet. If we do nothing one thing will be likely to happen, namely, that the English language will break up, America going one way, Australia another, and so on, till in the end, these communities will no longer be able to understand one another."

The contrast between the economic organization of the world and its division into countries has already been mentioned. As a result of this division, there have been organized, during the last few years, many conferences

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and recently we had in London a conference at which attended representatives of all the nations of the world. It was an abortive conference; at the moment too, the League of Nations is passing through a period of difficulty which may well cause it to founder altogether. The Disarmament Conference - also practically a world conference - has reached no decision and is in danger of breaking up. It is an interesting speculation as to how far the absence of a common language is responsible. Although the organization of these international conferences has reached quite a marvellous state of perfection, yet it still remains true that a large number of the members listen to a speech in a tongue other than their own, and then later have to listen to the same speech in several other tongues. Such delays and interruptions are bound to have a very unsettling influence on the whole proceedings, while the translation of a speech does not convey all its meanings or implications. You cannot really appreciate the other fellow's point of view unless you can think in his language. A universal language has, of course, been the dream of many for a long time past as the underlying solution of all international problems, and several languages have appeared, notably Esperanto and Ido. The Roman alphabet is gradually becoming universal as being the commonest and most useful alphabet, and it

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may be that the English language, being by far the most common language using the Roman alphabet may, in time, become the universal alnquage. Mr. Lloyd James, in one of his broadcast talks, said:- "A Swedish business man has come to the conclusion, as a result of his experience in doing business all over the globe, that what the world wants is a universal language, and that the only possible language for this purpose is English. He has spent a good deal of money in the cause, and is starting branches for the furtherance of his project in Germany and other countries. He is all for English, but all against English spelling, which in his opinion, as indeed in the opinion of most impartial observers, is one of the greatest hindrances to the spread of the language. So he gathered together, here in London, an international committee to produce a system of simplified spelling, that would be acceptable to all the bodies interested in the subject in Great Britain and America, and the result is the system known as Anglic, which, based on the foundations laid by Professor Zachrisson of Upsala, is what English spelling will probably be when the English-speaking world decides that the moment has come for spelling reform. In the spring of this year I went to Stockholm to see the system being used in some of the schools where English is tuaght. Children learn to pronounce English and to read it correctly from this simplified spelling, which is

perfectly regular, and not too much unlike the traditional spelling to make transition from one to the other difficult.

Spelling reform is always a thorny subject, for the existing spelling is so sanctified by long usage as to be regarded as sacred. We hate new spellings, and hate any disturbance of the printed page. 'Correct spelling' has become synonymous with education, and reformed spelling will consequently look uneducated. If we could only bear it for a few years, we should get used to it; it would look as good as the other, and our youngsters would have one fewer burden to bear in their early years.

THE INTERNATIONAL LANGUAGE OF THE FUTURE.

An Englishman, C. K. Ogden, of Magdalene College, Cambridge, has given reasons for the view that a simple form of English may very well be used as the International Language of the future. He has been working for ten years on the question of necessary words - that is to say, the smallest possible number of words necessary for all but special purposes.

With a list of eight hundred and fifty words and the help of about fifty which are now international (radio, hotel, and so on) Ogden is able to say most of the things that are needed for everyday existence. A story put into these eight hundred and fifty words from German, for example, goes surprisingly well; in fact the simpler

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language gives the writing a new quality. Science is equally well covered; but for every branch of it fifty special words are necessary. Talk or discussion in which this limited word-list is used (in place of the normal twenty thousand) seems quite natural, as may be seen from the gramophone record which we have made for Mr. Ogden as an example of the way in which the language may be used for such purposes.

Like everything that is new, this system, which goes by the name of Basic English, has had arguments put forward against it; but it is certainly a very important attempt to give us an international language, and it is being watched in all countries with the very greatest interest. A number of little books about Basic English have been printed by Messrs. Kegan Paul at 2/6d. each, and there is profit to be got from looking at any or all of them. Have no fear that they will make dry reading; for Ogden has, among other qualities, an uncommonly bright way of writing; and these talks have been of no value if you are still of the opinion that language is uninteresting.

So much for facts, and if other facts are needed, here is another which came to my knowledge this week, in the form of a little book from Geneva on Language in International Relations. Details are here given of the languages at present in use and the number of persons using them; and on the last page the view is taken that English

is the only possible language of which it may truly be said that it is used internationally."

Can we devise a form of Speech Training that will allow a person trained through this form to go to any part of the English speaking world and find himself understood and able to understand the people he meets there; at the same time will it have provided him with a speech that will not arouse unsympathetic emotion in the breasts of his hearers.

In addition to more intelligibility, there is another psychological factor of great importance - the arousing of sympathetic emotion in the listener. In the north here I have, for instance, often heard the representatives of southern firms described as 'slick'. Their language was too quick, and appeared to the northerner as clever. His message, his argument, his goods, whatever he had to talk about, might be excellent, but he had failed in the first instance to arouse any sympathetic emotion in the breasts of his hearers, and though perhaps this is not an unsurmountable barrier, the fact would certainly mitigate against a successful conclusion to the task in hand. Sometimes, of course, such a person will, through time, get well-known and often you may hear the remark 'He is not such a bad chap once you get to know him; it is only his way of talking.'

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Much theoretical blood has been spilt over the question of standard English, which may be said to be roughly the speech of the educated Londoner. If we take as our test the two factors already mentioned, universal intelligibility, and the need for arousing a sympathetic emotion, there is one thing that emerges quite definitely and that is that this standard will not measure up to our requirements. An interesting light is thrown on this point by a quotation which appears in Professor Pear's book recently published, 'The Psychology of Successful Speaking':-

"Mr. Whickham Steed gave a presidential address to the Modern Language Association, and his speech was reported in the Manchester Guardian of January 3rd, 1930. He said:- 'I wonder whether Mr. Baldwin would have been so successful as Mr. McDonald in America and the Electorate chosen to retain his services. He speaks English with a clear pronunciation but in his voice there is a trace of Harrow, which may have aroused latent resentment in the American Breast. But when Mr. McDonald spoke of 'the world's yearning for peace' the American hearts warmed towards him (laughter). Mr. Steed said he was one of those fortunate individuals who, when visiting the United States, had been complimented on speaking English with an English accent (laughter). 'The first time the compliment was paid to me' he said, 'I asked my adulator what he meant by an English accent. He emitted sounds from the roof of his palate, near the back of his throat and I recognized the caricature of tones which I had heard on occasion among Oxford Dons, members of the British Diplomatic Service, and Officers of the Guards'.

'If the English and American peoples are to understand each other' added Mr. Steed, 'they will need very carefully to study each other's political accents - that is to say, the connotations and the traditional implications of words and phrases which may seem identical no less than the varieties

of pronouncement..... The accents of Irishmen and Scotsmen do not fill American ears with a feeling of remote superiority."

Furthermore, Sir Richard Paget, in his book "Babel" says:-

"The new standard English of which I am thinking will be no means be the English of Eton or Oxford, any more than it will be the English of Yale or Harvard; it will be based on reason rather than on fashion or tradition. Its "r's" will certainly not be the degenerate sounds of Eton or Oxford: they will more probably be Scotch, or Wessex or American. On the other hand, its vowel sounds will not import the American twang, which is mainly due to a tightening up of the pharynx, and has nothing to commend it on gestural or phonetic grounds. Language will be recognized as being made of mouth and gesture, and good articulation will be an essential of good education."

Of course, we may set against this ideal, the point of view of not a few learned Englishmen, learned if insular Englishmen. Such a one is severely dealt with by Greig, who quotes him from the New Statesman:-

"We do not want to interfere with their (the American) language, why should they want to interfere with ours. That their huge hybrid population, of which only a minority are even racially Anglo-Saxon, should use English as their means of communication is our misfortune not our fault. They certainly threaten our language, but the only way in which we can effectively meet that threat is by assuming - in the words of the authors of the "King's English" - that Americanisms are foreign words and should be so treated. In any compromise between King's English and the President's English, there can be no imaginable advantage."

It is possible, of course, to appreciate the point of view of the writer of this article, as looking

at it from the point of view of the purity of the English language, but it ~~is~~^{is} surely quite the wrong spirit in which to discuss an international problem. Such an attitude of mind is deplorable in an educated person. There is biting satire in the statement 'of which only a minority are even racially Anglo-Saxon'. That we should do all we can to preserve the purity of the language is only right and proper, but we do not advance the solution of problems by setting nation up against nation, especially two nations so closely identified as the American and English nations.

The opening up of broadcasting for the Empire has brought the matter of universal intelligibility into the focus, and a correspondent writing to World Radio in December 1934, says:-

"A great many English people do not realize that Cockney accent and Cockney humour, as portrayed by English comedians or, for the matter of that, any form of English dialect, are not amusing to the average Canadian or American audience. It is to them, an unintelligible foreign tongue. The Canadian ear has become so attuned to the intonation of American speech that English speech, even with a trace of local accent or mannerism, is difficult to understand."

This brings us to the effect of broadcasting generally and the influence of the B.B.C. From the official publication there is dropped here and there, a hint as to the particular types of speech that produce the largest number of complaints. Lloyd James, in one of his talks, a year or two ago, mentioned that the type of speech

that was not too extreme seemed to meet with most favour. That is of course, a priori, what one would have expected. But in another way, the B.B.C. has undertaken the most needed task of endeavouring to raise the standard of speech in this country, and they have adopted as their English language, what is popularly known as Received English, which is the language of the educated southerner. It is a language which is recognized by all the leading dictionaries and is taken for granted by all writers on English language. Now, this standard has been fiercely assailed in many quarters, and not least by the late Poet Laureate. Dr. Bridges summed up his criticism of this standard as follows:-

- (a) That the present state of English pronunciation is critical: and that the conversational speech of southern England is fixing a degraded form.
- (b) That it is probable that for educational purposes, some form of phonetical spelling will soon be introduced into our primary schools.
- (c) That these two things taken together constitute a serious danger, because they are evident signs that the method of the new phonetic is to stereotype the degraded forms. The result of that would be a needless and artificial break between our modern English and all older literary forms of it, and this no reasonable person can desire.

Furthermore, in the Memorandum on the Teaching of English issued by the Association of Assistant Masters, there occurs this paragraph:-

"Behind the question of good elocution, and the use of phonetics, is another, that of standard English speech. There is a dread among some members that southern English speech may be taken as standard if phonetic methods are generally adopted, and they urge very strongly that nothing should be done too inculcate a method of speaking different from the cultured speech of the pupils' own town or district, and this view meets with general support."

With all this in mind, let us come back again to the question, "What then shall we teach?". The B.B.C. has, for the past few years been running weekly classes in speech training. These classes have been conducted by Professor Lloyd James, who is professor of Phonetics in the school of oriental studies in London. The science of phonetics owes much to Professor Daniel Jones, who is Professor of Phonetics in the University of London, while all the writers of books on phonetics have been connected with one or other of the London schools. All this is perhaps inevitable as in the present stage of the development of the science of phonetics, London is the only centre that can afford the leaders. The English language as spoken by the educated southerner has been analysed and there are set out in all books on phonetics, the various consonants and vowel sounds that are said to exist in standard English.* The fundamental question I would like to postulate is this:- WHERE DOES THE SCIENCE OF PHONETICS END AND THE ART OF SPEECH TRAINING BEGIN? Some writers seem to take an impish delight in demonstrating how slovenly

* Why does he break off like this?

our speech is and they then proceed on the assumption that as most educated people for example slur certain vowels we should teach children these slurred pronunciations. In Speech Training with children - as with most other subjects - over-analysis will defeat its own end. We must first pay attention to the outstanding defects. As I have mentioned elsewhere in this thesis, this analysing of a subject from the adult point of view is one of the weakest spots of our educational system. Admittedly, always the analysis is scientific, but it is the analysis of the adult mind - the scientific adult mind at that. Such analysis is, of course, a necessary preliminary in the tackling of any problem or subject, but to present that analysis to children in exactly the same way as a help to them in their solution of the problem seems to me to negative all the teachings of psychology. It would seem as if all the subjects of the curriculum were analysed and divided up into seven or eight years' courses culminating in an Honours Degree. The student who gives up the study at the end of four years may easily have missed important points which he could easily have assimilated. We want to train our students to speak reasonably accepted English. Shall we then start out on the basis that they are going to be

expert phoneticians? That, I suggest, is the process that appears likely to be the one adopted if the B.B.C. course is any criterion. I am not trying either to crab or belittle the science of phonetics - that indeed would be foolish, for it is the under-lying basis of speech training - but what I do want to emphasize is that we can only present the main features at first. If the student wants to go on further with the study, when he comes back to it armed with his first analysis and proceeds to a more minute analysis. This appears to me to be the learning process natural to the growing human mind.

Before me, as I write, is the pamphlet "King's English" published in connection with the speech training broadcast to schools. Below will be found lesson twelve, which is to be taken on the 7th December, 1933. At the time of writing the lesson is still some distance ahead, but that does not alter the situation, as the same thing practically occurred last year.

ANOTHER SHORT VOWEL SOUND.

Say the word 'man'; now say the word 'postman'. Do you use the same vowel in 'man' as you do in the man of 'postman'? Now do the same with:

land and England	the and the boy
ham and Birmingham	a and a bird
ton and Brighton	an and an apple
tor and actor	were and we were going for
sure and fissure	a walk
	that and that's the dog that
	worried the cat

Why this happens.

Now count up the different vowels and diphthongs that we have examined this term. How many does King's English contain? Give five examples of each one, and say which you think are the ones that you usually pronounce differently from mine.

This is the famous shadow vowel which is written phonetically ə . In most English books on phonetics it has attained the status of a distinct vowel sound, although Jespersen in giving the signs, says that, in his book, it applies to indistinct vowels. Now does the second sound in the word England need teaching? If we are presenting an exact analysis of the sounds of the English language there is no doubt at all that it must be included. In saying the word England quickly the last vowel is so slurred as to bear little or no relationship to the vowel as heard in the word 'land'. I would contend most forcibly that this should be entirely eliminated from speech training to children. It belongs to the science of Phonetics and has nothing to do with the art of Speech Training. Children do not need exercise in this sound, but in order to preserve some semblance of distinctiveness in the language, speech training lessons should emphasize on the other side. As Dr. Bridges said, soon almost every unaccented vowel in the English language will qualify for the symbol ə .

From Miss Ida C. Ward's book "The Phonetics of English" I abstract paragraph 160:-

No. 12 the first vowel in alone and the last in butter.

Description.

- (a) Central part of the tongue raised.
- (b) Tongue raised about one-third of the way from open to close.
- (c) Lips neutral.
- (d) The vowel is always very short.

(This I do not doubt is meant as a description of what actually takes place when this vowel is pronounced. Is it the natural transition to carry this over into speech training and instruct children how to pronounce this sound?)

In rapid speech there is no doubt that the only possible way in indicate the sound of the first vowel in the words alone, about, &c. is by the shadow vowel symbol, but surely no-one is going to suggest that this is the ideal to be set up before children. Is it not just a weakness that speech training should attempt to eliminate? I do not know whether I am on sure ground in suggesting that it will be agreed by all that the way in which such words are pronounced in rapid pronunciation is not one to be encouraged.

A different point of view would obviously be necessary in teaching a foreigner to speak English. The science of phonetics is the basis for both, but the method of approach must be entirely different. If we isolate

such slovenly pronunciations and teach them, the only result will be a rapid deterioration of what we teach, and the ultimate result will be that the vowel will disappear altogether. 'Among' is already in danger of becoming 'mong', while in the pronunciation of the best speakers, nothing but the shadowest of shadow vowels is left in the word 'mutton', and in the speech of the worst the whole word almost is swallowed. The ultimate result of such teaching will be that many unaccented vowels will disappear altogether, and the English language will become ^{less} ~~more~~ unintelligible among its various speakers.

In ordinary talk, we do not apprehend single words, but groups of words. We get the general sense of the whole and are often unable to distinguish the smaller words. Here are the ten most common words in the English language, and their phonetic transcription:-

the	ðə	in	ɪn
of	əv	that	ðæt
and	ənd	it	ɪt
to	tə	is	ɪz
a	ə	I	aɪ

While, of course, agreeing that this is how these words are pronounced in rapid speech we cannot agree that teachers of speech training should thus carefully

drill their students. At the moment, speech training is in the hands of the phoneticians, and of course no-one without a knowledge of phonetics can teach others how to speak, but I do suggest that if we standardise and teach some of these pronunciations, then the last result will be worse than the first.

I beg very much to doubt whether the speakers of standard English, as a body, do now pronounce the final vowel in butter as a shadow vowel. At any rate, I seem to hear ringing in my ears the sounds 'buttah please'. In every case where, in rapid speech, the shadow vowel results I think it will be much better to teach the original vowel, knowing full well that the stress of rapid pronunciation will give a more or less accepted pronunciation. I am discussing what speech training should consist of for English boys and girls. Most of the phoneticians are primarily students of the languages of the world and not teachers of English pronunciation. I quite realise that with foreigners, it will be necessary to teach the difference between the vowel in 'land' as a single word and as it occurs in 'England'. This, however, only emphasises the point that the two problems are entirely different, and that it does not solve the problem of speech training for English children simply to take over the analysis of the sounds of the English language.

THE VOWELS AND DIPTHONGS IN ENGLISH.

Phoneticians generally state that there are nine diphthongs, which are represented thus:-

day go my now boy here there more poor

As a result of his work with the B.B.C. - apparently the thousands of complaints about speakers are passed on to him - Professor Lloyd James has been able to form a fairly accurate judgment of the kinds of speech that satisfy, or cause least disturbance to, the vast majority of the listeners in this country. He says, "I find from experience that if you take all the known variants, somewhere about mid-way between the two extremes, that is mid-way acoustically, you will get a noise that can safely be used for broadcasting, one that will satisfy most people - more or less."

If we accept this procedure, then I suppose we might say, having carried it out with every sound, that we had a sort of synthetic standard English (if, of course, we had, at the same time, standardised rhythm and intonation).

Bearing this in mind, let us see what we can make of these diphthongs. The first one, I approach with a natural bias. I believe it is an accepted fact that all Scotsmen pronounce this diphthong as a pure vowel, approximately the cardinal vowel sound phonetically written:- *e*

On this point Professor James says, under the heading of "Sounds we don't like":- "Two extremes of the sound in words like 'day' and 'great'. The Cockney extreme, often approached by educated Londoners, makes 'to-day' sound like 'to die'; and the version that I would describe as 'Brighter London, 1932' is used by my younger and brighter students, who call me 'Mr. Lloyd Gems' - a very fashionable version indeed in grill-rooms and places where they dance! "

If we adopted for speech training purposes, the cardinal vowel sound *e*, then I think we would get a sound that would be acceptable the world over and would give offence to no-one. The fact, of course, that we aimed at the cardinal vowel sound would mean that we would get something approximately like it, and would tend to save us from the extremes that Mr. Lloyd James refers to. It is all nonsense to suggest that we ~~will~~^{shall} ever get everybody speaking exactly alike, but if we hit a mean, and try to teach that sound, then we are likely to get such a fair approximation as will ensure that no individual or class stands out from the rest.

The second diphthong represented phonetically is like the first, resulting in standard English speech as a very narrow diphthong. Miss Ward, in "The Phonetics of English" says, "Many varied pronunciations of this diphthong occur in different parts of the country, the difference

being due chiefly to the tongue position of the first element. In Scotland and in parts of the North of England, a pure vowel is substituted for the diphthong." But she goes on further to say that "In certain words where occurs, in an unstressed position it is reduced to *ə*. Thus obey, November, going, phonetics, protest."

Obviously then, it is recognised that this diphthong becomes fairly regularly a pure vowel in the Northern part of Ireland and in certain words all over the country. In American speech too, it is more or less a pure vowel. G. P. Krapp in "The Pronunciation of Standard English in America" says:- "This sound is less diphthongal in American than in British speech. In the latter, a great variety of diphthongal shadings occur, some of them familiar in the exaggerated representations of Englishmen and their speech on the American stage. In the speech of many, perhaps of most Americans, there is scarcely any trace of diphthongal quality in the sound."

In all the circumstances, would it not be better that in speech training we should definitely regard this sound as a pure vowel. If we teach it as the cardinal vowel 'o', we will get a sound acceptable to every English speaker and listener.

The last four diphthongs all occur in words ending in 'r'. While many students of language believe that the language would improve if we had more consonants, it is a remarkable thing that the letter 'r' is in standard English very seldom pronounced at all. Here is Lloyd James' lesson on the 'r' taken from the 1932 syllabus.

Lesson XXIII.

27 April.

More About the R Sound.

When is a t not a t? Who said pottage?
What is the difference between a park and a paddock?

Say the following words in your usual way, and underline the letter r every time you pronounce it:

rose	roar	roaring	berry	car
card	poor	poorly	poorest	forced
forest	fear	fears	fierce	fearful
fearing	fresh	fresher	library	secretary
far	far away	far from	home	

Now make a rule, if you can, saying what happens when the letter r comes:

- (a) At the end of a word when nothing follows;
- (b) At the end of a word when the next word begins with a vowel sound;
- (c) At the end of a word when the next word begins with a consonant sound;
- (d) At the beginning of a word;
- (e) Before a vowel sound;
- (f) Before a consonant sound, sounding an r that is not there.

Here again, I may remark that this is phonetics and not speech training. The whole lesson appears to be a leaf out of a phonetician's notebook. I do not think it can be suggested that this process will help students in the least to improve their pronunciation.

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Obviously the psychologist will have to come to the aid of the phonetician before real lessons in speech training can begin.

It would appear that only in standard English has the 'r' so completely disappeared and that in most other regions the 'r' is really a live consonant. It is still pronounced in Scotland, though one often feels, when away from Scotland that many people accentuate the rolling of the 'r' in order to advertise - when considered advisable - that they are Scottish. I do not know how it is but there seems a homeliness and a kindness in the pronunciation of the 'r' that seems to draw one and to put one in sympathy with a speaker who pronounces them. That is what Mr. Whickham Steed meant when he referred to the American hearts warming towards Mr. Ramsay McDonald, when he talked about the world 'yearning for peace'. To a Scot, the southern English way of pronouncing the word 'yearn' seems to take the whole life out of the word. While the exaggerated form, with the long dwelling on the vowel simply creates an emotion in the listener quite opposite to that which the speaker presumably expects. G. P. Krapp again, in the book already quoted from, says of the 'r': "In all regions of the United States, especially away from the Atlantic seaboard, orthographic 'r' commonly has phonetic value before consonants and when final."

diphthongs.

"The four diphthongs in words like fear, fair, four, and poor all contain the neutral vowel as their second element, and here the introduction of the ah version leads to such pronunciations as feah, faah, foah, and pooah, although the last two tend to become monophthongs, and to sound like faw and paw. The two triphthongs in words like fire and power play fantastic tricks under the influence of the ah vowel, fire being often pronounced fah and power pah, in kwahs and places where they sing."

"It must not be imagined that this ah vowel belongs only to so-called clerical English; it is very widely spread among educated speakers of a certain class, and is the one invariable symptom of what is known as the Oxford accent. It is the most unpopular sound in English today, and a very large proportion of the criticism directed at many broadcast speakers is aimed at this point. The stage comedian is sure of a laugh if he burlesques the peculiarity of pronunciation, and it is lamentable that any feature of behaviour associated with religious worship should be the object of ridicule. In the minds of the great majority of English people today, this style of pronunciation stands for unctuous social and moral superiority; it is too great a departure from ordinary speech behaviour to be accepted as genuine."

If we attempted the teaching of the 'r' and cut out the shadow vowel, we would then teach these four diphthongs as four pure vowels. 'Fear' would be written 'fir', 'fair' as 'fer', 'four' as 'for', and 'poor' as 'p_r'. We should then make a 'noise' that would be acceptable throughout the English speaking world and would not arouse the homicidal emotion in the breasts of listeners, as do such extravagant pronunciations as 'foah'

The disappearance of the 'r' gives rise to a large number of homophones, which makes the language less and less intelligible and anything therefore which makes for universal intelligibility should be encouraged. Consider, for example, the two words 'formerly' and 'formally'. In standard English speech, these two are, to all intents and purposes, homophones. Even in shorthand dictation, although the two words are written quite distinctly, yet in conformity with the pronunciation, frequently the one is written for the other and results in great confusion, for there are many cases where either word could be used, and yet convey good sense, but not the sense of the speaker.

J. Y. T. Greig, in his little book "Breaking Priscian's Head" says:-

"There is no virtue in the sound 'r' as such; a man who rolls, or seemingly rolls his 'r's' does not thereby acquire merit in this world or the next, but if the letter 'r' occurs as often in a language as 'r' does in English, it is plain common sense to pronounce it in some fashion, and sheer folly not to pronounce it at all. Because every time a distinctive sound is dropped out of a language that language is impoverished and worsened, the number of homophones being increased and by the same stroke, the chances of ambiguity increased when the language is spoken."

In speech training, therefore, I would suggest that definitely every effort be made to teach pronunciation of the 'r' and that students should be drilled in doing so. Lloyd James has made frequent references to these

'pah! &c. Similarly, with the triphthongs, 'fire' and 'power', we should teach as diphthongs.

I have discussed the question of speech training with many teachers, but apart from admitting or bewailing that much of their work was hampered by the very poor speech of their students, very few of them had ever given the matter any real consideration from the remedial point of view. One of them, however, did tell me that, in the teachers' edition of George Sampson's "Cambridge Lessons in English" I should find some reference to speech training.

However confident one might feel in the belief that it is radically wrong to adopt, for Speech Training, the phonetic analysis, yet to see this procedure carried out in book after book makes one just a little diffident, that there must be something in the nature of the subject that necessitates its treatment thus and that if all the experts in Phonetics are agreed then one must be greatly daring to suggest otherwise - and yet I think it is just their 'expertness' that has blinded them to the real problem. In this book I find much support for the views I have been putting forward here. G. Sampson states:-

On a matter of this kind one can only dogmatize. I therefore state my own view, which is, that in giving practice to children we should try to get 'hair', 'here', and 'fire' pronounced

as words of one syllable and we should try to eliminate that wretched 'shadow vowel' which tends to dominate our speech. That is to say, 'hair' and 'hear' should be pronounced with a pure, prolongable vowel terminating with a touch of 'r'. The same is true of 'fire' except that the prolongable sound is the last vowel in the diphthong 'I'. It is difficult, I know, to get these words as monosyllables, especially 'fire': but actual success does not matter. It is the effort that counts; and I think very strong efforts should be made to avoid anything like a double syllable."

"Actual success does not matter" he says, and that is perfectly true for you will never get it. Why then attempt an over-refinement when there are vital defects calling aloud for remedies and if we can even tone their effects down we will have achieved something in our Speech Training.

By the time the child has reached the age of 11 plus, and been promoted to a post-primary school, he has been taught to speak, but most of his teaching has been got outside the school. As the Report of the Departmental Committee puts it:-

• "The great difficulty of teachers in elementary schools in many districts is that they have to fight against the powerful influence of evil habits of speech contracted in home and street. The teachers' struggle is thus not with ignorance but with a perverted power. That makes their work the harder, but it must also make their zeal the fiercer. A child with home advantages hears English used well, and grows up to use it well himself. He speaks grammatically, he acquires a wide vocabulary, he collects ideas. When he wants to read he can procure books, and can sit in comparative peace in a warm and well-lit room. The English

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which he has learnt at home may suffice, independently of any school teaching, to keep him well ahead of his class-room neighbour. The latter's English may be a negative quantity, requiring great pains on his teacher's part to cancel out before any positive progress can be made. We are not surprised to be told that some children leave school almost inarticulate so far as anything like educated English is concerned."

Later on they say again:-

"It is not sufficient merely to correct the various errors of pronunciation as they occur, or to insist on children speaking up. They should learn to recognise every sound in standard English, should observe for themselves how sounds are produced and modified by position of the speech organs, and should practice producing them properly. The really scientific method, of course, would be to associate each sound with a phonetic symbol."

Although the Departmental Committee's Report goes on to say that -

"This may seem to some teachers an alarming suggestion, but the learning of the symbols will be found a very simple matter both by teacher and children, and the teacher needs some means, which our system of spelling unfortunately does not afford, of referring to the sounds of the spoken language without actually producing them."

Their suggestion that the learning of the symbols will be found an easy matter has not appealed very greatly to the teachers who have considered the matter and issued a report thereon. In a "Memorandum on the Teaching of English" issued in 1927 by the Incorporated Association of Assistant Masters in Secondary Schools, occurs this passage:-

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"Having regard to the commendation of phonetics by the Departmental Committee, it was desirable to make as definite a recommendation as possible on this point. At present, however, the body of experience is insufficient to justify any detailed advice. Among the supporters of phonetics in English teaching, some are strongly of opinion that it is important for phonetics to begin very early for the value to be great; others are equally sure that phonetics, and particularly the use of phonetic script should be postponed until the age of 13. The great majority of the members of the Committee were inclined to think that in most Secondary Schools, difficulties of pronunciation could be overcome without any elaborate machinery of phonetics."

In a similar report issued by the Assistant Mistresses in Secondary Schools, we have the following:-

"Opinions differ as to whether or not it is necessary to teach phonetics and some faults can be cured without this technical knowledge in either pupils or teachers. Indistinctness is largely caused by the lazy habit of running words together. There should be insistence on the sounding of final consonants and on the separating of words."

"Obviously the two large bodies of teachers who might be expected to be engaged in this work have, in more or less polite language, stated that they do not consider the use of elaborate signs worth while in the teaching of Speech Training. There may, however, be two reasons for this; first, they do not consider sufficiently the importance of Speech Training and are more or less content with the existing state of things. It may be that they feel that there is not sufficient time already to get through the syllabus leading to the School Certificate Examination. That is one point, and it has been

considered in another part of this thesis. The other reason obviously is that the existing International Phonetic Code seems to be much too unwieldy, that the students will spend the whole of their time learning the code, and that no time will be left for learning how to speak.

Recently, Professor Findlay prepared a new phonetic code in his book on "Foundations of Education" and he further elaborated it in his more recent book on "Modern Language Learning". His point of view there, is that of teaching any modern language and he has assumed that it is necessary to disjoin the symbols as is done with the International Phonetic Code. I append a copy of this code and, in addition, I include what I would suggest is necessary for a course in Speech Training in accordance with the principles enunciated in the preceding passages. Further I have set out in fair detail, a course in Speech Training, and have set down the phonetic script in both the International Phonetic Script, and in the Gregg-Finlay Code. A few minutes enquiry will demonstrate that the latter can be written very much more quickly. I have been using these symbols for a very long time and I affirm that in a course of Speech Training, the learning of these symbols will not take up any appreciable proportion of the time allotted. They are entirely new, have not in the minds of the pupils any previous associations

and do not call up any other conflicting symbols.

Despite the assurance of the Departmental Committee, and that of most teachers of phonetics, teachers of general subjects have not been able to exhibit any great enthusiasm for the International Phonetic Code. No effort has been made to use it in the B.B.C. course on Speech Training. I do not think it can be employed for the most valuable use of a phonetic script, that of dictation.

Even after the International Phonetic Code has been laboriously learned, the disjoining of the symbols necessitates a rate of dictation ever so much slower than the natural rate of speaking, with the result that the dictation is stilted and does not conform, even approximately to the natural way of talking. By the use of the Gregg-Finlay Code, speed of dictation approximates to normal, and it is only at this rate that Speech Training can really be effective. Actually, in the very first lesson, the students are able to read off the signs very quickly, and in the second are able to write from dictation. This is not a mere suggestion of a possibility; it has been done and is being done regularly. During the ordinary course of my work, I frequently have students from abroad, who come for the purpose mainly of learning English. They take a general business course which is intended for English students. In these circumstances, although the

phonetic symbols employed with them have been intended ultimately for speed shorthand, many of these foreign students have been able, within a course of nine months, to take a speed examination in English at eighty words a minute. There is no approximation either about their work; if they do not appreciate the exact sound of a word, then they must write the wrong outline. Furthermore no consideration at all has been given to them in the examinations, which were those of the Royal Society of Arts. They simply entered the examination in the ordinary way, and no attention was called to the fact that their native tongue was not English. The lessons I have set out are not intended to indicate a complete course in Speech Training. I am assuming that the teacher has a thorough knowledge of phonetics, and the ability to show the students how the various sounds are formed. What I have set out is intended to be an aid to the imparting of that information and the development of the ability in the students. It is a simple demonstrable fact that at the end of a lesson of thirty minutes, students will be able to read from the blackboard not only all the consonants given in the first lesson but all the words which include these consonants and the single vowel sound therein. An important point to notice is that the students will be using these same signs all the time and that it takes a very small proportion of the allotted period for them to become familiar, and as

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each new lesson consists of only one new principle which is to be used in conjunction with all that has gone before, the actual learning of the code is merely incidental in the study of the sounds. I have been using and teaching these symbols for many years, and I was teaching a considerable time before I was introduced to them myself. I put forward the Gregg-Findlay Code in the confident belief that it will serve the purpose in an infinitely better way than the International Phonetic Code, that it can be used for the teaching of the phonetics of any language, and that as I shall show in a later section it can be used for universal writing in the mother tongue.

As a matter of fact, there is not much difference in what I have been advocating here from teaching formulated by Professor Lloyd James, in his B.B.C. Course, except the point of view. I am suggesting that if we want our pupils to speak in such a manner as will enable them to be intelligible and pleasing, the way to achieve that end is not necessarily to drill them in the exact sounds used by a certain class whom we recognize as speaking in a desirable manner. When pupils enter the schools they are already speaking English. If we were teaching our children the language *de novo*, then, perhaps the phonetic analysis might form a fairly exact basis for our Speech Training. But it is far otherwise.

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Another question arises: who is to be the authority that will lay down the rules of pronunciation? I firmly believe that unless some international action is taken very soon, the English language instead of becoming a world language will gradually split up into dialects despite all the influences that tend today to unify the English language - gramophone, talkies, and broadcasting. Were some such authority created, and its recommendations taught throughout our schools in all parts of the English-speaking world, its recommendations made the basis of speech training by producers of talkie films so that all artists would tend to use the same consonantal sounds and the same vowels, and if the recommendations were acted upon by speakers on the wireless, there would be evolved, a form of speech that would make for the unification of the English-speaking world, would give rise to fewer emotionally irritated states and would make for the peace of the world. I do not think that this is a Utopian dream, but I do think that persistence in the present trend of speech training would tend in the opposite direction.

The complete Code, which I append, corresponds exactly to the International Phonetic Code; the simpler form enables the symbols to be joined in their natural order and thus makes for greater speed in writing. The

contrast between the International Code and the Gregg-Findlay Code is clearly brought out in the lessons. It is obvious to the eye that the time taken to write the words in the Gregg-Findlay Code is much less than with the International Phonetic Code. To see them written would emphasize the difference.

The student who has gone through a course of Speech Training, backed up by the use of these phonetic symbols, will not only have done something to improve his speech but he will have at his command an instrument that will enable him to put his spoken thoughts on paper at an incredibly higher rate than he could beforehand. When it is considered how enormous is the quantity of work that is written in school, and the rate at which it is written - twelve to fifteen words a minute is quite good - it can be realised what a vast amount of wasted time goes on. With a very little practice, the student will be able to write, from dictation, about fifty words a minute, but if the Speech Training lessons are continued, and at the same time

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a very small proportion of the period is devoted to a few simple rules of writing, the student will very soon be able to write, quite comfortably, at about eighty words a minute. The gain here would be enormous, but we will not pursue this at the moment.

Much interesting research has taken place of recent years, with a view to discovering the actual vocabulary that is in use by the ordinary reasonably well-educated individual. Many loose statements have been made as to the number of words in the vocabularies of certain classes of persons. It is said frequently that the ordinary man, for conversation has between three thousand and four thousand words. Of course, there are several kinds of vocabulary and a man may use only a certain proportion of his real vocabulary in conversation. Recent research, both in this country and America, has demonstrated the most common words in their order of frequency. One such list is "A Basic Writing Vocabulary, Ten Thousand Words most Commonly Used in Writing". This was compiled by Ernest Horn, Professor of Education in the University of Iowa. These words were selected from over five million running words taken from the vocabularies of business correspondence of people of more than average literary ability, of well-known writers, of letters printed

in magazines, and newspapers, of minutes, resolutions, and committee reports, and of excuses written to teachers by parents. In this list the word THE occurred 560,601 times, AND 589,000 times, A 359,000 times, BE 147,000 times, and ALL 91,000 times. This is a very important piece of work; one way of judging the success of a school's work might be to consider how many of these ten thousand words it had enabled its pupils to acquire in all their aspects - pronunciation, spelling, and meaning. Even with students of fair ability, it would be manifestly impossible to include the whole ten thousand during school life, especially with children leaving school at 14 or 15. Nevertheless, a very definite attempt should be made to see that the pupils gradually acquire, so far as is possible, the commonest words. Manifestly, it should be the duty of the school to equip the pupil with as large a speaking vocabulary as possible. Efforts are, no doubt, made in many books on English which are in use in our schools to build up vocabulary, but the approach is the reverse of scientific. One of the results of the abandonment of the classical curriculum is that the pupil no longer has that grounding in the English language. A knowledge of Latin, Greek, and French provides an immense grounding for the study of the English language. Much of that study

has disappeared and something must be given to take its place. Of course, it may be argued that the pupil will pick up these words in the ordinary course of study. That is an unscientific method, and leaves much to chance. Moreover, words naturally tend to group themselves into categories. I am not now proposing that every pupil should be a stenographer in the sense that he should learn to write shorthand at professional speeds. There is no need, at this stage, to go into the refinements of shorthand theory which may be considered necessary for high speed, but the ability to write at something approaching the rate of thought would be an inestimable boon. I propose to show how this can be acquired while, at the same time acquiring a knowledge of the pronunciation, spelling and meanings of the words. Suppose, for example, we were to decide that the minimum vocabulary of a pupil of fifteen should be five thousand words. That vocabulary I know from experience, is well within the ability of the average child, but the average child today has not really so many words. My contention is not that it would be a good thing, a desirable thing, a worthwhile thing for every pupil to come out of school with such a vocabulary, but that it is the bounden duty of the school to see that he does come out of school with that number, more or less, according to his ability.


INTERNATIONAL PHONETIC CODE.	GREGG CODE.	EXAMPLE.	INTERNATIONAL PHONETIC CODE.	GREGG CODE.	EXAMPLE.
i	ɪ	(been (here	k	—	can
I	o	bit	g	—	go
ə	o	among	r	—	are
ɛ	o	set	l	—	like
3	o	bird	t	—	Tom
æ	o	bat	d	—	do
a	o	calm	n	—	name
e	o	(day (fair	ɔ	—	long
o	u	not	m	—	make
ɔ	u	bought	f	—	full
o	u	go	v	—	very
ʌ	u	but	ɒ	—	some
ʊ	u	put	z	—	zeal
u	u	(poor (fool	ʃ	—	ship
ʌI	o	my	tʃ	—	church
ʌu	o	now	dʒ	—	judge
ɔr	o	boy	h	—	put
ju	o	pure	b	—	but
h	hat	θ	—	thin
w	o	went	ð	—	then
m	o	white	ʒ	—	pleasure
	o	yet			


I

Read the following words:

1. Key: Can: Quite: Cheque:

2. Good: Guard:



1. is the consonant k and is represented phonetically by the symbol  ;

2. is the consonant g and is represented phonetically by the symbol  ;

Practise saying these two sounds :

Read:


Read; Rhone; Arrow; Look; Hollow; Full;

You will notice that in each case the part underlined represents only one sound: these are represented phonetically by the symbols:  

Now see if you can say the following:

Read:

He; need; see; eat; piece; receive;

You will realize that they all have the same vowel sound; it is the keenest and sharpest of vowels and is represented phonetically by the symbol: 

Now read the following:

 ki

 gi

 ik


 ig

 ri

 li

 ir

 il

Say the sound represented thus: 

Now just breathe out and add this sound and we have the word: "he ";

We represent this phonetically \dot{h} ; you see now that the sound normally represented by "h" we represent by a small dot placed above the symbols following:

Read:

\dot{h}
hi

\dot{h}
hil

\dot{h}
hir

(see *Gen. Arq.*)

Note: The circle vowel is written inside the curve.

II

Read:

1. Know; not;

2. Bomb; mat; hymn

1. is the consonant n: -

2. is the consonant m: —

Read:

1. Tom; wrapped;

2. Do; ground;

1. is the consonant t: /

2. is the consonant d: /

Read:

\dot{n}
ni

\dot{n}
mi

\dot{n}
ti

\dot{n}
di

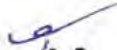












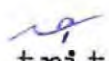
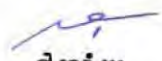

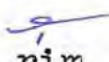
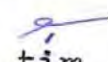
\dot{t}
it

\dot{t}
id

\dot{t}
in

\dot{t}
im

Read:

 rid	 lid	 mit
 lin	 nit	 dim
 mid	 mil	 rim
 did	 min	 din
 kin	 trit	 drim
 tik	 rim	 tim

Note: It will be seen that the circle vowel is written with right motion when joined to straight strokes and is placed outside the angle formed between two consonants.


III

Read: (Revision)

 hid	 hit	 hil
--	--	--

Read:

Beg; Head; said; red; ready.

You will recognize that in spite of the different spelling all these words have the same vowel sound: it is represented by the small circle already familiar but with a dot beneath instead of a dash:- 

Read:

hid

hed

ten

tin

net

nit


hen


den


git


met

tel

dek

red

rid

nel


ned

nek

IV


Read:


Give; pretty; sieve; England; women; ready.


Here again you will realize that despite the variations in spelling the vowels underlined in these words are all the same. The phonetic representation is the small circle without any distinguishing mark thus: 

Read:


Il


drIl


mIl



dIm


hIl


It


hIt


hIm


hIl

We have now learned three vowel signs: these are the sounds heard in the words:

nil

Nell

kneel







nIl

n l

nil

v

In this lesson we learn four consonants.

(p


b


f(ph)


v

Read:


pi


pil



pIl


















pEl


pir


bir


fir


hIp

Read:
hip
fir
fir
fil
fel
fil
vil
if
hiv
vim
pip
pɛp
pip
rip
rɛp
rip
pik
p k
pik
bit
bɛt
bit
liv
liv
rif
fig
pin
pen
bim
bin
bin
ben
fit
fit
fɛt
vet
film
fin
fen
fid
fɛd
fidl
fern
vil

VI

The symbols for the consonants have been so arranged that the more common join very easily:

pr	br	pl	bl
pli	plid	bled	
blid	brIm	brim	
prIm	prin	bred	
blit	prItI	felt	


fr	fl		
fri	fli	frid	flit
flit	fret	fred	frIl
frend			


-8-



kr



kl



gr



krid



krim



grit



grIt



klin



krip



krɛp



klIpt



grid



grId



grin



grIn



griv


grif


grIm


grIl



grIp


krIb

VII


Read:

at; cat; fat; sat:


The vowel in these words is represented phonetically: 


Read:



æ t



cæ t



fæ t


hæ m


mæ n


hæ d


hæ t


mæ t

Read:

ræ t

læ d

græ nIt

æ tIk

mæ rI

mæ rId

mæ p

mæ d

mæ ltrIt

mæ ntl

kæ mp

kæ n

kæ ndId

kæ ndI

kæ ntin

kæ nI

kæ ptIv

kæ tI

næ p

næ b

næ g

næ tI

næ vI

pæ k

pæ kt

Pæ dI

pæ dI

pæ l

pæ n

pæ nIk

pæ nt

ræ bIt

ræ k

ræ g

ræ fl

ræ lI

ræ n

ræ m












ræ mbl

ræ pId

ræ pt

tæ p

Read:

 tæ b	 tæ k	 tæ g	 tæ lI
 tæ n	 tæ rIf	 væn	 væ lI
 væ lId	 væ lV	 væ t	

VIII

Read:

Cross; peace; sell:

Phrase: peas; raise

The sound heard in the words in the first line is the "s" and in the second "z" which are represented by:

() and (/)

These are known as the:





































Right "s", Right "z" and the Left "s", Left "z" respectively.

That "s" which forms the most natural joining is used. Little difficulty will be found in this respect.

Read:

 sIp	 pæ s	 sam	 sæ p
 sæ d	 sæ g	 sæ t	 sæ tIn

-11-

Read:
sind
sent
nidz
hɛdz
pis
piz
ridz
sliv
glivz
livz
livz
sliv
sit
set
sit
fitz
skim
skim
laps
skin
stil
setl
sei
nets
læmz
linz
bimz
ivinz
skid
spri
biz
gɛs
lips
lips
piks
piks
skrin
skrim
pirs
sɛl
sil
zil
lis
plis
kris
vɛɛt
rɛɛl
slik
list
lɛɛt
slip
risk

Read:

Calm; laugh; balm; Derby; clerk; mass: 0

The vowel heard in these words is phonetically written: 0

0
a

0
hɑ

0
mɑ

0
pɑ

f
bɑm

f
bæ.n

f
bæ d

f
cɑm

l
lɑm

l
sɑm

X (See Introduction)

Read:

May; hay; say; allay; tame: 0

0
pé

0
bé

0
fé

0
vé

0
ké

0
gé

0
ré

0
lé

0
té

0
dé

0
né

0
mé

0
hé

0
sé

tem

sem

kem

ren

em

ken

get

det

mek

sek

ple

krImet

hel

gret

ret

let

het

prer

bren

tren

blem

plen

fler

fle

pel

bel

sel

rev

brev

fer

bek

pen

ben

nevI

fred

verI

THE TEACHING OF ENGLISH 2 & 3.

Summary. With the disappearance of the classical curriculum the teaching of English to a certain extent loses its basis. There is here put forward a method of analysing scientifically the English language and this method is claimed to have the advantage of obtaining the co-operation of the pupils. They do not sit and listen but have to record the words phonetically and learn them in a three-fold aspect: pronunciation, spelling, and meaning.

The ability to write at speed from dictation means that the student has learned all the words and phrases in the matter dictated - that is to say they are in his vocabulary or that any new words must be learned. There is no such thing as writing mechanically except in so far as the pupil has worked through the successive stages of learning the words in the three-fold aspect mentioned above. The careful selection of the matter for dictation can make this work at the same time a course in descriptive economics, in geography, and in attuning the ear to the rhythm of good English.

Having learned the phonetic symbols from the point of view of Speech Training, the child will naturally begin to use them in ordinary writing. There is a peculiar fascination in this recording quickly and phonetically the spoken language. However much you may try to discourage it, you will not be able to keep the average child back. It will be the most natural thing for him to do. Now, let us see what this involves. By this time, the pupil has gone through the Speech Training lessons and learned to write any word in the English language phonetically. Devices can now be learned which will enable him to cut down the amount of writing very considerably, and gain that ability to write much more quickly without any loss of legibility. One of the first of these simple devices is the indication of the ordinary common prefixes. The prefix 'con' and 'com' for instance, is written merely with a k: that is to say the word conduce is written k-duce. This may seem rather strange to look at but the pupil learns it just as quickly as it takes to say it. In fact, the pupil really appreciates the point before the teacher can complete his explanation in words. The teacher can represent the prefix, first of all, on the blackboard phonetically - that is the pronunciation. He then gives it its meaning - together or with, and proceeds to put on the blackboard a number of words in which the prefix occurs.

CON:-

con-ceive
con-ception
con-cern
con-fer
con-ference
con-fess
con-science

con-vene
con-vention
con-fine
con-vey
con-vict
con-viction
con-venience

With the root idea of the prefix, the pupils are directed to consider the meanings of all the words. It can be very quickly shown that the first word conceive is made up of two parts, the second of which comes from a Latin word meaning 'to take', the physical meaning of the word being therefore 'to take together'. From that it is an easy transition to the idea of the taking together in the mind e.g. of an idea. It is not suggested here that the pupil must carefully learn the derivations, he is but given the idea underlying the word, but he will meet the same roots so often that gradually he will get to know them.

Conception is easily explained to him as the noun from conceive, and the teacher can bring to the notice of the class such words as receive, reception, deceive, deception. The first parts of these words will be discussed later, but the student already has sufficient knowledge of them to profit from the reference to them. Similarly, the class can be told, quite simply, that the second part of the word concern means 'to look at' or 'to regard', and again, other words can be brought in, discern for example.

Time might very profitably be employed in considering such a word as confer. Here the teacher may draw attention to the very peculiar word fero, tuli, latum, which means in Latin 'to bear' or 'to carry'. He might continue somewhat on these lines: 'the word that I have written on the board means I carry, I carried, carried, to carry. Have we any words in English that change themselves like this? Of course we have, the simple verb 'to be'. We say 'I am', but 'I was' and so on. Now, let us see if we can get at the meaning of the word confer. Literally it means to 'carry together'. The various meanings can be touched upon, and the teacher can quickly bring to mind such words as infer, defer, differ, refer, transfer, and so on. It is worth while spending a little time on such common roots as 'fer' as they occur in so many words, and when they are met with again, the pupil will only have to attend to the other part of the word. Every pupil of twelve, will know roughly what transfer means and to tell him that literally it means 'to carry across' enables him to see the exactness of its meaning. This appreciation of the exact or root meaning of a word will give an enormously wider appreciation of meanings of words in general, and gradually there will be built up the feeling that language is not a static thing, and the pupil will

appreciate, for instance, how the word confer literally meaning 'to carry together' is now used in the sense of talking together, exchanging opinions, and generally with the idea of talking on important subjects. He will gradually learn too that words regularly tend to fix themselves to certain cases. What is a conference, for instance? Immediately the whole class will have it, and at the same time, they will have got something more - the idea that words gradually attach their root ideas in special cases. Similarly, on first meeting the root in the word convene 'to come together'. Then we have convenient and convenience - a coming together, agreement, accord, and convention, a meeting together, while also it has taken on a very special meaning as indicating common usage. It is easy to bring in the word convention, and the whole is seen in proper perspective. I cannot too strongly emphasize that we do not stop and insist on any laborious memory work, for most of the derivations occur over and over again, and will gradually become part of the student. What we are trying to give him is not exact philology, but a background of knowledge that will enable him to have a more exact appreciation of the meanings of the words he is using, or that he meets with in his reading. This takes a great deal longer to explain in writing than it actually takes before a class. The teacher has on the blackboard a large number of words with the prefix "con"

The students now proceed to read these, from the black-board, and the words are dictated, and the students read back from their own writing. Mis-pronunciations, wrong accents etc. can easily be checked at this stage.

All the common prefixes in the language have their special signs in shorthand, a common method being the dropping of the initial vowel, e.g. in im un, in, and em. There is no learning in this at all; the pupil has only to have placed before him a number of words in which this particular prefix occurs, for him to learn the principle immediately. Infer, unlike, unwilling, impossible, impress, impulse, the various meanings can be explained very quickly. Take a very simple prefix 'trans'. This will illustrate the procedure. This is represented by the sign for 't' written above the line before the remaining part of the word. On the board are put, phonetically written, the following words:

trans-act	trans-fuse	trans-mit
trans-action	trans-gress	trans-plant
trans-fer	trans-ition	trans-port
trans-form	trans-lation	trans-verse

There is absolutely no learning the sign for 'trans', and if the teacher goes over these words, telling the class first of all that the prefix 'trans' means across, and then explaining the exact root meaning of all the words.

Particular attention might be drawn to the words 'translate'. 'transfer'. Again the teacher might profitably put on the blackboard the principal parts of the verb: fero, tuli, latum, ferre, and explain to the class how from one part of the verb we have trans-fer and from another trans-late. Literally the words mean the same thing but translate is now used most commonly for the idea of carrying thought from one language to another but sometimes is still used in the same sense as transfer especially of the movements of the clergy. Similarly, all the common suffixes have a simple invariable termination, and the pronunciation, the spelling, and meaning, all can be taken at one fell swoop. In addition to the common prefixes, and suffixes, words with similar endings tend to group themselves into categories. For instance, the ending 'pose' is written invariably in accordance with a simple principle which runs through the shorthand as 'po'. In this connection we have the words:-

com-pose	re-pose	op-pose	pro-pose
de-pose	sup-pose	dis-pose	

with their derivative ending in 'position'. The mere placing of these words on the blackboard disposes of the theory and if the teacher proceeds to explain the meaning that the final part in all these words comes from a Latin

word meaning 'place', and as the student has already met all the prefixes before, it is a simple process to review and to get at the root meanings of all these words. Words like suppose, oppose, can be explained and 'assimilation' brought home. Here, I may remark, that this is a much more suitable way from the point of view of young people than the normal approach to a subject like this.

"Assimilation: when in the course of the historical development of a language or in the course of a word formation or sentence formation, an original sound is replaced by a new sound, under the influence of a neighbouring sound, the original sound is said to undergo an assimilation" This is the definition by Professor Daniel Jones in "Pronunciation of Russian." In this list of words ending in 'pose' which are placed on the blackboard - and read by the students, are many words which have taken on a special meaning, and it must add considerably to the appreciation of the exact significance of the words for the students to get at the exact derivation. I have not space to go into great detail in this connection, but I know it is difficult to appreciate from a skeleton outline the great importance of this study unless one has gone through it. I know that the study of shorthand in this manner has improved my own knowledge of words even of some

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of the five thousand most common words. I have included French, Spanish, and Latin in the course of my University work, and have also a fair knowledge of Greek, but if I were going to explain the meanings and derivations of some words, then I had to explain all the difficult words and this has sent me to spend many interesting hours with the dictionary. 'Difficult' is, of course, a relative term; there are many words in our vocabularies that we use conventionally and correctly, but we do not appreciate the exact meaning. Much interesting and instructive information is to be had from a study of words, and it is no unprofitable study.

I can imagine a criticism of the subjects contained in this section, a criticism with regard to time. I may say that I have been teaching shorthand purely from a utilitarian point of view, for a number of years, and have attained some slight reputation for training students to reach high speed in a very short time. I stress this because it is just in this way that I have attained success. Teachers may complain that they have no time to go into the study of words but I cannot afford to do without the study. My blackboard is always full of words, and the students read them from it, and I know that if they cannot read them fluently, they do not know them, and therefore cannot take

them from dictation. I must explain the words further but all the time, the phonetic transcription of the word is before them, and calls up the exact sound of the word. In this way they get to know the words in their three-fold aspect, pronunciation, meaning, spelling.

Logan Pearsall Smith:-

"The art of words or literature as we know it was I believed in my youth an art like other arts, whose technique could be acquired by care of application and no-one ever taught me - as the young are now authoritatively instructed - that if only our thoughts are sincere, and our feelings adequately excited, the right words will rush to our pens without care or trouble. It is my misfortune I suppose that having been born before the date of this great labour-saving discovery I should have spent so much of my time in studying words and reading dictionaries."

It must not, of course, be thought that we study only with words; letters, articles, speeches and books are all written in the phonetic script, and armed with his special study of the principles underlying a particular lesson, the pupil approaches this reading matter with a mind well attuned to understanding.

I append just a few other endings which students are called upon to study, to read, to write, and to appreciate. Each has a definite phonetic outline which is first put on the blackboard, then the following words are added:-

-pute:-

dis-pute com-pute re-pute im-pute de-pute

-putation:-

dis-putation com-putation re-putation
im-putation de-putation

-spect:-

in-spect pro-spect per-spect intro-spect
circum-spect

-spire

in-spire con-spire re-spire ex-spire
trans-spire

Is it not excellent training to dwell on the meanings that these words have acquired relative to their origin? All of them have taken on additional special meanings but that yet have close connection with the original. Expire is much more commonly used in the sense of breathing out - for the last time - conspire literally means to breathe together - can we not see them literally 'putting their heads together'? Does not a realisation of this add greatly to the richness of the vocabulary? Similarly with inspire and transpire; one's consideration of the origin of the last word, 'to breathe across', surely gives a wonderfully exact idea of the meaning of the word.

No-one can say exactly how the information leaked out - it was just wafted across, or, as Dr. Johnson put it, transpire means 'to escape from secrecy to notice'.

Students develop amazing interests in lessons of this kind but it is not merely the interest that is naturally developed in listening to an interesting story - and the story of words is an absorbing story - for they have to co-operate. They have to read the words from the black-board; they have to write them from dictation and then in connected matter specially prepared to incorporate these particular words.

Sir Josiah Stamp:-

"Even English is probably more vital in the long run to progress in economics than to many other studies. For those studies may reach their goal and survive with indifferent expression. But modern economic life can, as I believe, be raised only by a more general understanding of economic principles by masses of the community. These principles may be difficult to interpret, unwelcome in purport, "dismal" even in appearance, and they need every aid that a discriminating, nervous, and supple English can give them. Attractive presentation in lucid and graphic writing and speaking must be the key to the popular mind. Every economist must aim at being a Clay or a Withers. But in economic analysis itself poverty of vocabulary or a lack of nice sense of differences is a terrible restriction, for a successful analysis makes great demands upon qualitative distinctions conveyed in words. Here are no test-tubes, or meters, or legal rigidities. Words and words again are the symbols of thought, the means of proof, the medium of persuasion."

The ability to write and to talk good English depends, in my opinion, on a two-fold ability; that of appreciating the actual sounds of the words, and of appreciating the exact physical or original meaning of the words. Moreover, you can never have exact thinking without an exact knowledge of the meanings of the words. I believe that if the phonetic writing which I am now advocating were introduced into the schools, that very soon, there would arise, naturally a demand for phonetic spelling. I do not think it would be merely a demand but it would seem to be just the natural thing to carry over into ordinary spelling what one has been doing in the phonetic script.

There is, however, very much confused talk about our spelling. In all but the commonest words, I believe that bad spelling is due simply to the fact that the writer is but faintly acquainted with the mis-spelt word. I do believe that it is almost impossible to mis-spell a word you really know. The trouble is that pupils in school are not encouraged to have an exact knowledge of any words. We use words, but we never stop to analyse carefully their meanings. We never have them before our critical eyes long enough to have the spelling imprinted on our minds. We are not acquainted sufficiently with the original meaning and derivation of the words and so we do not know whether there are two 'ps', or whether a word-ending

should be spelt 'sede' or 'cede'. If, for example, we know the exact meanings and not the approximate meanings of words ending in 'sede' and 'cede' we cannot mis-spell them. With the common words, it is a different matter. With them, continual use has evolved a pronunciation that is in no way represented by the spelling of the words. I have no acquaintance with the teaching of young people to read, but I can appreciate the awful task. In a recent talk, Professor Burt complained that one of the defects of English education was that reasoning did not seem to be developed. How can it be otherwise? I feel sure that - although he may not be able consciously to express it so - that the child's conclusion must be that in this world he must never conclude, but say and do what the teacher says he must. He may learn that 'rough' is 'ruff', but if he pronounces 'dough' in the same way - that is another of his many mistakes. How can he see the connection between things when there is no connection in most of what is presented to him? I do not know how far the question has been probed, but I believe a good case could be made out that the English spelling and the teaching of reading must tend, very largely, to kill reasoning in the young mind. And when to this is added our chaotic system of money, weights and measures - a system which no-one ever masters - is it any wonder that not only is there no time for the exercise of any latent reason power there may be but that

the dominant feeling in the mind of the child is that all is arbitrary. These may not be his words but his actions betray his thoughts.

[Recently, under the influence of the Hadow Report, many schools have been established for the education of students of the age of 11 plus, and a fair proportion of these schools have taken to themselves specific titles such as Central Commercial. In these schools - generally in the final year - is included teaching in Shorthand, Book-keeping, and sometimes a little typewriting. Most of these schools disclaim, are at great pains to disclaim, any intention of training experts; they state explicitly that they are not engaged in any form of vocational training, but are at most giving a slight bias in the final year. In most cases the amount of work done in the subjects mentioned is little more than introductory. Presumably, as their title implies, these schools are training students who are, for the most part, going out into commercial life. Let us see therefore, what the leaders in business have to say about the acquisition of these subjects. Sir Charles Wakefield, in his book 'Careers' which has been one of the most popular books during the last few years, says:-

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"First of all, real efficiency in shorthand and typewriting can never be wasted effort. In themselves, these two subjects cannot, of course, be said to be the keys to success; they are merely tools that are universally useful and necessary. It would, however, be a mistake for the ambitious youth to go to the other extreme and regard these attainments as not worth powder and shot. The value of rapid and trustworthy shorthand to the departmental manager or confidential clerk, at business conferences or trade association meetings, is obvious. I have known shorthand writers who were very rapid in taking down, but whose transcriptions suggested considerable doubt as to the meaning of some of the symbols found in their notes! The command of one or both of these tools of the business worker frequently proves a decided factor in success in the more individual and responsible posts both inside and outside the office - to the commercial traveller, the private secretary, or the personal assistant to a managing director, to the sales manager, or staff officer. Other qualities - character, intelligence, or special knowledge of one kind or another - are the essential requirements; but, as between two young men equally gifted in these important matters, the one who can best use his pen and his typewriter will probably be promoted. That is why I place these rudimentary weapons of commercial life first, and my advice to the healthy ambitious youth is not to neglect or despise them, but rather to take a pride in becoming efficient thereat as soon as possible. Whatever may be the nature and direction of his aspirations, they cannot but help him on his way."

In the foregoing pages, I have tried to show how this ability can be acquired with the maximum benefit and the minimum time. We have seen how a student can acquire a knowledge of words in their three-fold aspect, pronunciation, spelling and meaning. A frequent argument against the teaching of shorthand in schools is that it is a mechanical

accomplishment. I feel that that complaint is made without a very clear conception of what it implies. If the mechanical accomplishment of writing shorthand from dictation is placed side by side with such a mechanical accomplishment as the fitting of jam-jars on to a labelling machine, then the comparison is quite wrong. To enable a pupil to write mechanically is the ultimate aim of shorthand teaching; but what does this involve? It involves the instant recognition of every word that is dictated; it means that the person who can write mechanically has gone through a very long process of analysing and recording words and phrases, and has become so familiar with them that the instant they are heard, he is able to put the corresponding symbols on the paper. We frequently give dictation tests to students in schools at the usual rate of 12 to 15 words per minute, and we expect - and are not disappointed in our expectations - to get mistakes. The pupil who has acquired the art of writing shorthand mechanically has developed the ability to recognise the words and phrases at a rate five to ten times as quickly as that of the ordinary pupil. I must confess that, although I have developed no inconsiderable ability to record the spoken word, I feel very far indeed from that most desirable state of being able to write shorthand

mechanically. What people are really referring to when they talk thus are those students who have acquired the art of mechanically recording approximately in symbols, what they hear. They do not write the words that are spoken because they do not have these words in their vocabulary. That is to say, if the same words were dictated at a very slow pace, they might recognise them, but their knowledge of them is merely hazy and has never been made definite, with the result that they have no time to dwell on the difficult word until other difficult words come crashing in upon them and the resultant transcript is a mess. What Sir Charles Wakefield refers to is real efficiency in shorthand and typewriting, and real efficiency means that the pupil has acquired a very wide vocabulary in the three-fold aspect already mentioned - he knows the spelling, pronunciation, and meanings of the words he has to deal with. A shorthand writer cannot record more than a very small percentage of words that are not in his vocabulary and when he transcribes what he has written, he must in practical training add these words to his vocabulary. There is no letting things slide in this respect; he has got to type the word back correctly and if he does not know it, but has only got a reasonable approximation in shorthand symbols then he must turn to

the dictionary and search for the word. As I say, if these words form more than a very small percentage of the whole, then that writer has not acquired real efficiency. Not only have the words to be written correctly, but the whole transcript has to be punctuated and paragraphed properly. Anyone who has had to deal with training of this kind knows that one of the great complaints of the existing method of secondary school education is that it is very possible for a student to come out with a School Leaving Certificate including English and yet be unable to punctuate and paragraph a piece of prose. The ability to take down in shorthand and transcribe in proper form represents a standard of attainment of general education that is much rarer than most people will believe possible. No exercise shows up the poverty of vocabulary more than this. It is here that deficiencies come out crystal clear. There is no approximation about it, no fifty per cent. will obtain a pass. Unless the pupil knows the words, he is always liable to make mistakes and the large number of mis-renderings is very largely due to the simple fact that the dictation contains words that are not really in the vocabulary of the pupil. English teachers, I am quite certain, would hardly believe how indistinct and hazy is the idea of many pupils on words that occur within the five thousand most common words I have referred to. They know they have heard of the words, and occasionally

they will use them in the proper way, as the boy who said that the meaning of ~~ir~~ascible was 'an old man'. As against this statement of Sir Charles Wakefield's, that real efficiency in shorthand and typewriting can never be wasted, I have quite frequently heard - and heard of - many educators in more or less responsible positions discourage pupils from learning shorthand and typewriting. The attitude of many of them is summed up in the phrase 'once a shorthand-typist, always a shorthand-typist'. Never was there a more specious catch-phrase. ~~What~~ does it involve? The suggestion is that if a boy or girl enters a business office and proves himself to be efficient in these subjects, then the scheme of things will naturally demand that he or she shall continue in the job he does best. Despite occasional advertisements which demand premiums for the learning of a specific business, apprenticeship in business is largely a relic of the past, no longer are boys apprenticed for three or five years, the master, in return for the services of the apprentice at little or no salary, undertaking to teach the boy the particular business. Now-a-days, girls are very largely used for the secretarial side of business work. Nevertheless, I do not think there is any better way of learning a business. A boy who is a shorthand-typist to

a chief is in daily touch with him, he learns the whole business at first hand, the policies and ideals of his chief. If he has the ability to go further, no person could have a better opportunity, he is right in at the fountain head; but if his abilities do not extend beyond his immediate work, equally then will he be found out. But it cannot be suggested that such a person will improve his position by not acquiring the ability to serve in this way. He is mediocre, and the mediocre cannot obtain high positions in business. If, on the other hand, he does possess brains, he cannot help showing up in a favourable light. There are a thousand and one different ways in which he will exhibit his superior ability, and in due course, he is bound to be offered the opportunity of service in a more important sphere.

In these days, when business houses are lamenting the dearth of executives, more attention might be paid to this aspect of the work. Business records contain many illustrations of the fact that persons now occupying the highest positions in the business world owed their start to the fact that they could write shorthand and work a typewriter. In one of his broadcast talks a little time ago, Mr. S. P. B. Mais was amazed to find that when the Mayor of Worcester mentioned, in the course of a talk to the unemployed, that he owed his start to his ability to write shorthand. Immediately, a large number of the

unemployed were anxious to enrol in a course to learn shorthand. Looked at in the proper light, this is a most natural thing. In the economic organization of business, it is simply the rendering of a service, and in return for that service, apart from the wages, the boy learns the whole routine of the business.

In recent years, girls have come to the fore in business and many of them are now taking up executive positions. Of course, much of the work in business can best be done by women because of the fact that they are much more closely in touch with a large section of the buying public, the feminine section. Miss E. Maude Woodyard, F.I.P.A., Managing Director of Messrs. Savard, Baker & Company, Limited, large advertising agents in London, aptly illustrates this in a talk which has been reproduced in a booklet 'Careers for Women in Advertising'. She says:-

"It is as secretaries that many girls gain their first entry into advertising. Nearly all - if not entirely all - the women who hold leading positions in advertising today entered by that road; naturally so, by whom and how better can any business be learned than by a wideawake, capable, intelligent person in constant and close association with a fine exponent of that type of work."

How much more then would boys get a thorough introduction to the real problems of business.

As I have indicated in my main thesis, the curriculum I am putting forward is not vocational training in any narrow sense. What I do suggest is that for those

pupils who are going out into commercial life there should be provided some pre-view of what the business world is doing, and there is no way in which this can better be accomplished than by shorthand dictation. This may appear a somewhat startling statement at first glance. I append the dictation given to a class of students during one week, the extracts are typical. Actually, this class is engaged in shorthand for two periods of 45 minutes per day, they are studying shorthand intensively. There is a very large variety of sources from which such matter can be taken. The young student is not ready for any formal talks or lessons about the theory of business. If a teacher starts talking formal economics to a class of young students he will very quickly bore them; they cannot listen more than a few minutes, because the whole field which would illustrate the talks is absolutely unknown ground to them. Moreover, they are still active young creatures, they are eager to be doing things and are not naturally given to sitting and listening. It is no use flying in the face of human nature; they are active; let them be active, but see to it that we use this activity in such a way as will be of service to them when they go out into the commercial world. These young people have acquired an ability to write from dictation. There is nothing the young like better than exercising their skill in taking down from dictation. Dr. L. P. Jacks recently said:-

"I have tasted many sorts of pleasure in my life, and I will tell you what my experience has been - not because I think it unique or peculiar, but because I believe it to be very common. The pleasures that have given me most satisfaction, the times when I enjoyed myself most completely, were the times when I was exercising some kind of intelligent skill. I am far from counting myself a skilful man, but I have just enough skill to know the enjoyment that comes from it. The pleasures that I have enjoyed most are not those which I bought ready-made on the market, but those that I made for myself by exercising the very modest amount of skill I happen to possess."

As is well known to most adults and to many children in a matter of fact way, British capital is invested in most other countries in the world. The Annual Meetings of these Companies take place in London and the Chairman's speech is reported in the "Times" - by way of advertisement. If extracts of these speeches are carefully chosen we can present our students with a wonderful review of trade and industry. One day we are in South America, perhaps discussing the difficulties of the working of the railways of Brazil, how the absence of rain has limited the output of crops and has thereby decreased the takings of the railway; or perhaps we are a little further north in the same continent, wondering with the coffee producers how they are to market their coffee at a fair price. There is no question here of setting out statistically the fact that Brazil exports so many tons of coffee or so many tons of rubber every year, the students absorb it in the course of the dictation.

Then another day we proceed to Australia and discuss the pastoral industry and lament the declining price of wool, or note with satisfaction how the drought was just broken in time. Perhaps another day we ^{shall} ~~will~~ be discussing the state of the motor industry and how there is a great demand yet untouched, that many people are just awaiting better times to become potential buyers of motor cars. This type of work can be a fine course of descriptive economics; a finer course, I am confident, cannot be supplied. It would be easy to lecture students and try to give them a bird's-eye view of all the industries, but they are little human beings, just like older human beings, much more interested in stories. They do not like the information extracted and set out in statistical or other formal way; that is the way of the student. But the only way thoroughly to appreciate and digest such information is to get it at first hand. The work will provide a background upon which more earnest students can later proceed to a study of formal economics. If the students do not go on, that is unfortunate, but at least we have provided them with a knowledge, a descriptive knowledge, of business which is as far as they will allow us to take them. Of course, many of the statements made in these speeches are partisan statements; the speakers are speaking from their own point of view, and that is exactly what people do in real life, and it is an excellent exercise for young people, especially if the

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teacher has the ability to present the other side, the other point of view, in a few words. It is frequently necessary for the teacher to elucidate some point, or to give a short statement that will put the matter into proper perspective for the students. The normal method of procedure in dealing with extracts of this nature is as follows: the teacher will read the whole piece, possible prefacing his remarks with such a statement as "Well, we are off to Canada this morning; we are going to have a talk about dairy farming in Ontario". After the reading by the teacher, students will read back and certain of the outlines will be placed on the blackboard. In so far as these are new words, then they are added to the students' vocabulary. The words, of course, may not be entirely new, but the students' previous knowledge of them may be a little hazy, or they are used in a somewhat different context. Frequently, of course, instead of reading back, the students will have to write back and the transcript is then marked from the three-fold standpoint of shorthand errors, spelling and punctuation. Many of my more mature students, students who have taken a Higher School Certificate, or University Degree, have been surprised at the vast amount of general information they have thus acquired about industry, about geography, and about economics. Unfortunately such knowledge cannot

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be tested in the traditional way - by examination. I am not denying the value of definite lessons in Geography but there is a vast amount of information here that cannot be supplied by formal lessons but the greatest advantage here is that you have the co-operation of the student - they are not just sitting supposed to be listening for they are recording every word of it and if the selections are carefully made their minds are becoming attuned to the rhythm of good English. This work, then, can have a three-fold value, an informative value, an 'English' value, and the immediate value of being able to write quickly. See over. leaf.

I have stressed the necessity for Speech Training and for a more exact study of the pupils' vocabulary, because without these, the business of education cannot really begin. The literary element in our post-primary schools is so strong that compositions and essays are demanded of pupils of quite tender years before they have had any considerable practice in the art of writing itself. We expect them to perform two things at the one time, create ideas, and embody those ideas in words. As Mr. George Sampson says, "To ask the poor elementary boy to express himself in writing is like asking a penniless man to be liberal with his money, you are asking him to give you what he has come to get from you - ideas, notions, and views of life".

Before I leave this Transatlantic question I might refer to a psychological difference in making a comparison between this country/and the United States, a difference which has an important bearing upon the results of our operations under what seem/to be almost identical conditions.

Both the United States and Great Britain have been suffering, and yet, on the one/hand, the insurance experience in this country, that is to say, the incidence of fire loss, has been quite satisfactory/from an insurance point of view. In the United States it has been the exact reverse - even private dwelling houses,//especially when mortgaged, suffering from the prevalent mortality.

I would like to emphasize this feature because of its wider/and greater significance than its mere effect upon the accounts of insurance companies. The American continent is really populated by many/races, due to the propagation of the great numbers of immigrants upon which the United States depended for unskilled labour/in the rapid development of their great country. And I submit that this interesting fact to which I have drawn/your attention, of the disparity between the loss experience in the United States and here at home, during precisely similar/times of difficulty, is a testimony to the commercial honesty of our people.

Most of us have been surprised at/the intensity and length of America's ordeal of depression. They themselves have been probably more surprised than the lookers-on. / But it is obviously the natural and inevitable sequel to a long period of advancing world power which some day/had to encounter a serious, if temporary, halt. The United States, with its rapid exploitation of machine instead of man/power, and its insidious instalment system, had simply discounted several years ahead, and reckoned that, if all was not well//with the world, they were still able to absorb their own mass production. They have learnt that their prosperity is/ infallibly bound up with that of Europe.

But anybody who knows America with its vast possibilities, its resilience, and its/comparatively small debt, must feel convinced that some day - perhaps before long - they will experience a sudden spectacular recovery, but//with violent fluctuations and probable temporary disappointments before they can again settle down into their stride.

Canada - that loyal Dominion//with its immense potentialities - has necessarily been affected by the distress of its great neighbour, and is suffering from the//same adversity. The reduction in our Canadian premiums has not been severe, but there are evidences that the same accession of moral hazard has been at work to the detriment

of our net profit, which is nominal compared with the/
handsome results we have been accustomed to in so many
preceding years.

(452 words)

You will be interested to hear something as to future policy. Our policy, as explained by me two years ago/is to extend the degree of rationalization already accomplished; this we are now doing in a practical way. It is/to-day the fashion to decry rationalization. This is brought about by the fact that it has failed where misapplied. / The conglomeration of many manufacturing units or other interests, irrespective of their relation to one another, under single control does/not constitute rationalization, neither does mere magnitude ensure efficiency or economic advantage. On the contrary, it is almost certain to // produce problems not easy of solution. We have no pride in our recent acquisitions because they have swollen the size of our company; indeed, these bring a sober sense of added responsibility.

Rationalization is best effected where the main products/manufactured and their raw materials common are akin, where there can be secured real economy in administration, judicious concentration of factory production, and the abolition of overlapping selling effort. The manufacture of materials which form a part of the main/product with a view to securing vertical control is often a mistake, they can generally be purchased more cheaply in// the open market. These are matters in which the advantages and

disadvantages are finely balanced, and their correct determination depends/on the personal factors of good judgement and the right experience, qualifications not always so readily found, since the policy/to be applied in the management of a merger of many concerns may differ materially from that involved in the/operation of a single unit.

Apart from the immediate benefits which we may look for there are the wider advantages/which will come to the cement industry as a whole if it is prepared to reap them. Our policy is//not a secret one, it is open to all. It is to use our strength to give increased stability to/the industry if it desires to cooperate with us, and the majority does. This is not altruism, it is commonsense. / Through cooperation every member of the industry should enjoy relative prosperity. I like to see my competitors making money because/if they do I know that with our technical efficiency and established selling organization our prosperity is secured to the/advantage of all concerned, whether employees, shareholders, or consumers.

There are some industries or considerable sections of industries which, if//combined, would attain increased efficiency and benefit from the elimination of excessive competition, which retards progress and depresses wages. Individualism/ is not suffering from industrial combination, but from

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In speaking for the Government of Canada, I propose to indicate briefly the course of action to which we are/prepared to subscribe. We are agreed that the monetary and economic aspects of the depression are inseparably interwoven and that/we must seek their solution by simultaneous action. On the monetary side we are wholeheartedly in agreement with the/programme which we believe should receive even greater emphasis than he gave to them.

In the//first place, I wish to urge with all the power at my command that the two greatest trading and creditor/countries represented at the Conference should, at the earliest possible moment, reach an agreement upon a stabilization of their exchange/rates. I am aware how exceedingly difficult this will be under existing conditions, but it is clear that without such/agreement this Conference will fail in the purpose for which it was called. The United Kingdom and the United States/must agree to stabilize their currencies in relation to each other, and, if a common price-raising policy can be//agreed upon, in relation to the gold franc. The ratios originally selected may be privisional, but they should represent, so/far as may be ascertainable, the real and permanent values of the respective currencies as determined by relative price structures/and balances of payments. Such a programme could be progressively

extended to the smaller countries. As one of the smaller/ countries, whose economic life has been seriously affected by erratic fluctuations in the world's basic currencies, Canada will endeavour to/maintain the value of its dollar on a stabilized basis in London and New York when these two centres agree// to establish a stable relationship between their currencies.

Exchange stabilization is an immediate necessity. However, it probably could not be/achieved, and certainly could not long be maintained, unless simultaneous efforts were made to introduce a new equilibrium of costs/and prices of the commodities entering into international trade. We have had four years of deflation: the results of that process/have already been recounted by previous speakers.

(373 words)

The excessive competition to which I have referred arises from the fact that there are to-day in London four/ of what are usually termed popular daily papers, and between them there has sprung up a chase for circulation the/ like of which has probably not been seen in the world before - at any rate, certainly not in this country./

What is done by one is immediately copied by the other, regardless of cost and of profitable result. In such/a competition this is almost inevitable, and the vicious circle grows wider and wider.

To-day it is the era//of bribing readers with free gifts. Insurance is still with us, but, for the moment at any rate, it has/dropped into the background as a means of securing new readers. One the other hand, the practice of bribing people/to buy newspapers has developed to such an extent that presents of the most extravagant character are being literally hurled/at the poorer classes of the public in the wild race for circulation. To-day in the poorer areas of/the large industrial towns, if a person signs a form undertaking to take the paper for 12 or 16 weeks//he is given a bribe costing as much as 10s. Such is the fury of competition that the bribes offered/ include washing-machines, china dinner services, electric irons, women's mackintoshes, men's trousers, overcoats,

stockings, women's underwear, and a whole list/of articles of a most extraordinary character.

In order to bring these bribes before the public many thousands of canvassers/are employed, working in teams. The gifts offered by the different papers vary, but not materially, for as soon as/one kind of gift is found to be popular by one newspaper, the others go in for something similar. The //teams work whole districts, door to door. What happens is, of course, obvious. No sooner has the team of one/newspaper canvassed a district than it is followed by the team of another, and so on. Two results ensue. The/readers keep switching over from one paper to another, yielding to the successive blandishments of each new team of canvassers,/with the ever-increasing variety and value of bribe.

Of course, the reader obtained in this way does not, as/it were "stay put." Sooner or later he reverts to the newspaper he has always taken, or en route he//falls a victim to the temptations of the canvassers of one of the other papers. Therefore, it is necessary to/keep on canvassing and canvassing, each new canvass having as its object the replacing of the readers lost. In other/words, the readers gained by A are lost in due course to B, and then to C, and pass/round like a game of musical chairs.

(467 words)

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We have felt for a long time that if it were possible we should like to sue our profit-making/position in such a manner that the worker might have the opportunity of obtaining a more direct share in some/way. We have come to the conclusion that anything of the nature of issuing Workers' Shares is impracticable, It is/a matter on which there is general agreement that in all cases of small capital absolute security is of more/importance than interest. Happy as we may feel about the position of Joseph Lucas, Limited, at the present time//we cannot guarantee its permanent prosperity, and therefore we should not feel content nor would it be wise to provide/the workers with an opportunity of securing shares which would have to be subject to the risks of good and/bad trade with all that might mean in the future.

We have already in connexion with the works a savings/bank, which was initiated by Mr. Harry Lucas 26 years ago, and I should like to take this opportunity of/paying credit to him for the hard work he did in the early days long before municipal banks or//War Savings Certificates were thought of, to instill into our workers the value of thrift. This bank, however, is naturally/largely used for temporary deposits, and the rate of interest is governed by market conditions, although we have gone/out of our way to make it higher than the workers would be able to earn in other directions./

Our present idea is to use the earning capacity of the company itself to assist in providing a bank more attractive in those cases where the workers are able to leave in their savings as a permanent investment.//Now at the very commencement I should like to make it quite clear that the company itself gets nothing out of it. A new bank, either in the form of a separate company or as a trust, will be formed, which will be run quite independently of the company, although our directors and management will naturally have to superintend the working of it. The moneys placed at its disposal will be completely outside the control of the company as such. Not only will the company get nothing out of it, but it will, of course, cost the company //money, as all such schemes must do if they are to be of any value to the workers.

In this instance we propose taking powers to issue up to 100,000 shares of a special class, to be styled the Lucas/Redeemable Preference shares. I would emphasize that these are redeemable for a purpose that I will explain later on, and the rate of dividend will not be fixed as is usual with Preference shares, but will equal the amount of dividend on the Ordinary shares whatever they may be in the future. These shares will not be issued direct to the workers for the reasons I have already explained, mainly that we could not guarantee that they will always remain/

at the value at which they were issued, and while we know there will be no grumbling if there is any appreciation, we also know full well that we should never be able to explain any depreciation.

(558 words)

Now, I think we would like to acknowledge the help that the overseas Press and newspapers have accorded to the/Travel Association. We have been helped not only by overseas and foreign correspondents resident in London, but also by the/editors of many newspapers in their own countries. This association, and they are beginning to realize it, is helping them/very much and these Dominion and foreign correspondents feel that they can consult the Travel Association and can get any/information about this country and Ireland that they desire. These is just one message I would like to give to//their readers and it is this: Travel must be both ways. If, just now, our people are being dissuaded from/travelling abroad for purely reasons of pleasure - quite apart from business journeys, which I would be the last one to/dissuade them from - I want our friends in foreign countries to realize that this dissuasion from travelling for purely pleasure/reasons is only due to the present financial situation. We most certainly regret any hardship that may be caused by/the cutting off of a certain flow of British visitors, but we would at the same time make it clear//that this is only an emergency measure and that as soon as the situation becomes more stabilized our people will/most certainly go abroad again, just as we hope our foreign friends will come to visit us here. Travel and/trade are international, and it is only by a free

exchange of goods, services, and visits that we and the world can live in comfort and peace and mutual understanding. If people in all the different countries were always to stay at home and try to eke out a livelihood by, so to speak, taking in each other's washing, it would be a precarious livelihood for all of us.

Before leaving the question of the Press and the newspapers/ I would like to say a word about the position of the British news services to foreign countries, and I will, for example, take South America, which was the last of the great Continents I visited this year. There is no actual shortage of news in South America dealing with events in Great Britain and Ireland, and this country gets a very fair share of the space in the important newspapers, but with the exception of a limited service of news sent to Argentina, for example, by Reuters, and except for a few special messages by their own representatives to a few papers, all news sent from England to Latin America is transmitted by non-British agencies. What is the result of this? The result is that by the time this news reaches the Latin American reader he sees us and our affairs through spectacles which are neither ours nor those of his own country. I most sincerely hope that some means can be found to increase the volume of purely British news to South America, and I commend this particular matter to the attention of this association. (509 words)

To return to the association itself, like all up-to-date organizations you are making great use of the radio,/and I have been much impressed with the fact that the association's broadcast talks on Great Britain and Ireland are/being given this winter, not only from 300 stations in America and Canada, as they were last year, but/also in the Union of South Africa, from many stations in South and Central America, in France and other countries/in Europe, and farther afield in Batavia, Singapore, and Hawaii. This means that the inhabitants of a considerable portion of//the world's surface are having their attention drawn once a week to the fact that Great Britain and Ireland are/pleasant and interesting and efficient places. The association is most certainly worthy of the support not only of the travel/interests, but of local authorities as well and I am glad to see on the list of elections to the/Grand Council, which you have on your agenda to-day, the names of many local authorities who are taking a practical/interest in your work.

There is one point to which I attach great importance. I have seen what other nations//are doing in the way of organized publicity for thier commerce and industry as well as for their attractions. / Everybody in every country is so intensely interested in the doings of his neighbours and in the doings of his/foreign freinds that we do not travel, even when we can, entirely for pleasure. Since the War, and particularly

in/the very critical times through which we are going, we are intensely interested in and anxious to see the industrial/ side as well as the pleasure side of travel. It is important, as well as offering and showing what this//country has in the way of trips and places to spend a holiday, to show that we have some great/industries. I was, therefore, for this reason glad to hear from Lord Derby that we are not overlooking the importance/of issuing publicity material regarding modern developments in this direction are under/consideration, about which he may have something to say to you in a moment.

Seventy years ago Delane, the great/editor of the The Times, said: "My business is publicity." Let us remember that phrase. It recalls to my mind another,//a somewhat lighter, quotation I once heard, adapted from an old rhyme: "Early to bed and early to rise, but/you'll soon be bust if you don't advertise." (Laughter.) These words I feel are very true at this moment. There is/undoubtedly - and I have said it before - a great deal more that we in this country could do in the way of advertising; but our publicity at the same time must be rationalized, as they say in industry. It must/be organized on broad, cooperative, and economical lines, as the Travel Association is doing. By supporting the Travel Association you//are doing a service to our country and to your own business, and I look forward to the day when,/as an association and as a nation, we shall be well repaid for the thought, labour, skill, and courage which/have gone to the making of such a useful and practical organization. (552 words)

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It is with very great pleasure that I come to the third annual meeting of the association, of which I/ am proud to be patron; and it is also a privilege to say just a few words in support of/this association, which was born at the very worst possible time, but has, nevertheless, made good so far. I feel/that I am entitled to come to a meeting of this association because I have travelled fairly extensively in the/last 10 or 12 years. I have not only travelled to and visited all the Dominions and Colonies and many// countries throughout the world, but I have also travelled extensively in Great Britain, so that I can see, so to/speak, the two sides of the question. I know what Great Britain has to offer to those who visit us. / I also know the attitude of and the way we are looked at by foreign countries. I cannot help feeling/that up till now too little has been known abroad of what Great Britain and Ireland have to offer, while/there has been too much talk about the financial and the industrial difficulties from which we, in common with eve y//other country in the world, are at the present time suffering.

This is the moment when we want to try/to impress on the world that our country is still alive; that it means to go forward again, and I/would like to pay a tribute to the way that the association has tried to do this. My

first evidence/of the work that this association has been doing for the last two or three years was at our British/Exhibition in Buenos Aires last year. They had a very well organized stand and they had much interesting and useful//literature, which I was glad to find had been written in Spanish as well as in English. My knowledge of/Spanish is but a very halting one, but I asked the experts and they all said that this literature was/translated into very good Spanish indeed. I was also impressed with the calendar that the association has produced. It contains/a lot of information about our country which I am sure many of us would do well to read, and/I was so impressed with it that it was with great pleasure that I wrote a foreword for next year's//edition.

(401 words)

You have doubtless heard of the use of gas compressed in cylinders to take the place of petrol for the propulsion of heavy/vehicles. During the War gas was used for this purpose, but only in an elementary way. In Paris much progress has been/made, and there are numbers of vehicles there running on compressed gas. I am sorry that I have been unable to visit/Paris, but our engineer, Mr. Smith, has done so, and given us a full report. This report states that the vehicles ran//very well, and that the drivers preferred the gas to petrol. We have consulted the authorities and are obtaining cylinders for experimental purposes/and hope very shortly to have some of our own lorries running on our own gas. We at first thought that we/should have to obtain cylinders and compressors from France, but I am glad to say that we can, and are, getting them here. / I mention the use of gas for this purpose because the possibilities are great. I think I am right in saying that//if the bulk of the buses in London were run on gas it would mean the carbonization of no less than 500,000/extra tons of coal - a matter of some national importance. As a convenient figure to memorize, I may say that the gas/produced from a ton of coal is equal to, approximately, 50 gallons of petrol.

We are part of an industry of now over/100 years' standing. Throughout this long period it has been conducted

on sound business and commercial lines, and to-day we are//
doing more than ever in research work, and carbonize coal
in the most effective and efficient way, and we have made
great progress/in modern methods of salesmanship and adver-
tisement. I would like here to say that, although by use
of all the most up-to-date/plant we from time to time have
to reduce employment in certain directions, we are increasing
employment on the district, where more/is done than ever before
for the benefit and convenience of our customers.

Our pension fund and co-partnership fund enable us to//
retire men with a reasonable competence, and the result is
that, in spite of keeping up to date in every department, we
are/not adding to the pathetic army of unemployed.

(428 words)

I suggest, and you may possibly agree, that the past 12 months has been the most absorbing of any year/which we can remember. Full of interest and instruction: a fit period for the cynical philosophy of a Montaigne or/a Voltaire. For, during the rapid and dramatic unfolding of another series of pictures in this post-War evolution, many/a theory has been upset; many a prognostication has been falsified and even many a principle called in question. From/month to month we have had a succession of surprises, until the views which we had held as to the//soundness of such and such a policy, or the security of such and such a class of investment have often had to be scrapped.

Country after country has been flying to take cover, not knowing where was the safe harbour of/refuge. The pound, the dollar, the franc; America, Central Europe, Great Britain, the Danube; inflation, deflation, reflation, each taking its/turn in the great political kaleidoscope. All revolving round the ruin caused by the War, and the lamentable consequences of/a peace which perpetuated so many elements of discord.

The irony of it all! Denouncing and inveighing against conditions, when,//as so often happens in our private lives, these conditions are largely of our own making. If the

troubles under/which the world is labouring have been occasioned by the nations themselves in their rivalries and jealousies, they can only/be cured by a frank recognition of the facts, and by a generous disposition to contribute to the solution. Just/as doctors are doing, statesmen now require to pay much more heed to the significance of psychology, not merely in persons, but even still more in nations.

The distrust created has led nation after nation to close its doors, and//to think only of itself. And from this vogue of insular nationalism, engendered by peace idealism, we have not been/immune. We have been driven to put up a shield of protection. Tariffs have been wisely adopted, partly as an/ expedient to obtain revenue, and partly as a weapon of defence against the pronounced tariff systems of other countries. But/tariffs are a barrier to international trading and, like the race in armaments 20 years ago, must be futile if/everybody can play the same game to an unlimited degree. The salutary perturbation, therefore, of other countries, because of our// Government's **action**, has been its best justification.

For ourselves we cannot ever forget that we are not a self-contained/country; that our revival, and even our survival, must depend upon our ability, with an open door and a free/ hand, to **exploit** and trade with the uttermost nations of the earth. For it is this freedom and enterprise that/made Great

Britain the country which it has been, and which we all hope it will be again.

We are/all vulnerable, and there are glimmerings of hope that other countries - now, fortunately, including the great United States - are realizing//that they cannot depend only upon themselves, but that the whole world is really a great Commonwealth, and that the/common weal must be the great objective if individual countries are to regain prosperity.

(534 words)

It is an illuminating fact that while the essay forms an important part of almost every post-primary examination in English, yet, when the students leave the schools and are subjected to other examinations to test the quality of their English, the essay is found to be quite unsuitable. Sir Stanley Leathes told the Departmental Committee which enquired into the teaching of English, that as a test in the use of English 'the Civil Service Commissioners do not consider that essays are suitable for boys and girls who come up for examination at about the age of sixteen'.

As a matter of fact, the view of the Civil Service Commissioners as embodied in the examinations which they set to young people fully meet the demands of business; they represent a standard which the business world demands. Business does not expect an acquaintance with the whole of English Literature, but, on the other hand, does not suggest that the study of literature is not a worthwhile study, but it does doubt the worthwhileness of that study if, at the end of it, students cannot express themselves either in speech or writing in reasonable English.

With regard to the requirements of business the Departmental Committee's Report says:-

"We have already asserted our belief that there has been marked progress in teaching the art of writing English and that this progress is continuing. But we must admit that the business

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firms whom we have consulted are for the most part very critical of the results. Thus, Messrs. Vickers, Limited 'find great difficulty in obtaining junior clerks who can speak and write English clearly and correctly, especially those aged from 15 to 16 years'. Messrs. Lever Brothers, Limited, say 'it is a great surprise and disappointment to us to find that our young employees are so hopelessly deficient in their command of English'. Boots Pure Drug Company, say: "Teaching of English in the present day-schools produces a very limited command of the English language. Our candidates do not appreciate the value of shades of meaning, and while able to do imaginative composition, show weakness in work which requires accurate description, or careful arrangement of detail".

We regret to note the suspicion of school methods which these extracts indicate. Probably it is to some extent a legacy from the past; nor, perhaps, do employers always realise the peculiar difficulties to be faced. Young People, again, in the interval between leaving school and entering the service of firms such as these, are apt to let slip much that had been painfully taught them, and for this the school is often unfairly blamed. Yet there is still much justification for these criticisms, and they afford a very strong practical argument for further concentration on the teaching of English. It is of momentous interest to the future of education that the country as a whole should believe in the schools, and that teachers and employers should, so far as possible, see alike and pull together. Though the outlook in this direction is very encouraging, teachers often have reason to complain that the demands of a short-sighted utilitarianism stand in the way of their ideals. But over the teaching of English, at any rate, utilitarian and idealist can join hands. Teachers will make no sacrifice of their ideals, or rather, they can only fulfil them, by endeavouring to meet the requirements implied in the above quotations. And they will be doing the greatest possible service to education if they can convince its critics that, so far, at any rate, as the position of English is concerned, their cause of complaint is disappearing."

This, then, is the primary essential, that in the earlier stages and as a regular routine, lessons in the art of writing should be given, but that always, there should be little or no time spent by the student in creating ideas about which he has to write. Much time is wasted in this respect, and the result is that, as a rule, most essays are unreal and artificial, expressing second-hand ideas about subjects that are, for the most part, only suitable for adult minds to consider. A consideration of the essays which Dr. Burt produces as representing the average essay of pupils of tender years will illustrate this. They are full of mis-spellings and bad grammar and the amount of work done is very meagre due to the pupils having to make up what they want to say and then having to spend time moulding their ideas into proper form before they have enough acquaintance of proper form. It has been my misfortune, for many years, to correct some hundreds of essays of students from 14 years upwards - students who are taking an entrance examination. Here and there, an original mind, or a good adapter, but, for the most part, the essays are full of artificiality, of platitudes - full of the things that the pupil seems to think he ought to be saying and ought to be feeling. This is only an aspect of what has been discussed in the main thesis - that we are demanding from children what we might reasonably demand from ourselves, and if we did

respond ourselves I wonder what marks we ^{sh}would get?

The present day curriculum of the post-primary schools aims too high and the result is not merely that the children do not benefit from the teaching, but that actually much harm is done to them. One of the great aims of education, as I see it, is that the pupil shall be able, as a result of his education, to disentangle the true from the false, the real from the artificial, and shall be able to see the essential connections between things. To judge from the essays of many pupils, they are being trained in artificiality, humbug, and hypocrisy, instead of being trained to express themselves simply and distinctly.

The curious fact is that almost every examiner who issues a report comments very, very strongly on the inability of the students to express themselves clearly. Here is the examiner to the Royal Society of Arts commenting on the work of students taking Stage 1, age 14 to 15:- "The bulk of work, however, is only moderate in quality and there is a distressingly small proportion of really good candidates who deserve a credit mark. In some centres there would appear to be a tendency to pay more attention to the prescribed books than to the weightier matters of clear work and orderly use of the language". "Again, while some of the work here was good, most of the essays were descriptions of places where the writers would like to spend a holiday instead of places where they would like to

have their home; some were quite remote from actuality People can't live on mountain tops listening to 'tinkling streams' and watching the 'rainbow hues of sunset'. Again the general standard reached by candidates at this examination was disappointingly low as the high percentage of failures testifies. The moveable Easter which put the examination a fortnight earlier than last year may be a possible explanation. No excuse, however, can be offered for the bad spelling, faulty punctuation and grammatical errors which were far too common." The same examiner devotes, each year, several pages of critical comment mostly deploring the inability of the students to write reasonably good English and to spell, punctuate, and paragraph their work. It should be noted also that, for the most part, the students taking this examination are selected. The examination is not a compulsory one but is taken by a large number of post-primary schools of a lower grade than ordinary secondary schools. They would appear to be schools formed under the Hadow Report.

The Departmental Committee, appointed by the President of the Board of Education, were asked to consider the position of English in the educational system of the country 'regard being had to the requirements of a liberal education, the needs of business, the professions, of public services, and the relation of English to the other studies'. It seems a pity, therefore, that no representatives of

business were appointed to that Committee. One would have thought that surely in the world of business were some persons distinguished alike both in commerce and in letters. The Committee would, I think, have been saved from the patronising tone of some of the passages in the Report; in paragraph 134 they say:-

"The terms of our reference appear to distinguish between the 'requirements of a liberal education' and the 'needs of business'. Had this distinction, upon investigation involved a conflict of educational aims, we should have been obliged to report that 'the needs of business' must be strictly subordinated to those of 'a liberal education', as interpreted in our Introduction. To the surprise of some of us, and to the satisfaction of us all, the answers to our Questionnaire made it clear that what the leading firms of the country desired most of all in their employees were just those qualities which a liberal education, rightly understood, should develop in young people. Indeed, their chief count against the schools was that present-day education was not liberal enough, and, in particular, that it was conventional and divorced from reality. Naturally the 'realities' they had principally in mind were those of the industrial and commercial world; and, as will presently appear, we consider them wholly within their rights in insisting that education should reckon with the vocation of the taught. Yet, as their vigorous denunciation of 'Commercial English' showed, they were very far from demanding that education should be the bondman of vocation. Rather the implicit assumption which underlay their requirements was that British trade would be efficient and successful in proportion to the amount of intellect and imagination brought to bear upon it, and that the schools would best serve 'the needs of business' by developing to the utmost the intellect and imagination of those about to enter the business world."

The implied suggestion that all engaged in business must be ranked with the 'Philistines' is indicative of the great gulf there is between educators and the

ordinary world. Sometimes I almost think that if there were any clear demand by the lay-public, the profession of education instead of considering the demand critically, is apt to adopt the parrot cry 'utilitarian' and shut its ears to any further talk. The business world, on the other hand, is apt to consider the whole profession as quite out of touch with life, and to be living in a world of their ^{its} own. Each side, I feel, has a contempt for the other, and in so far as the one is training the future members of the other, such an attitude is to be deplored.

The departmental Committee evidently circularised some forty of the most important firms in this country, asking for their views on the teaching of English, and their comment on the answer received was: "It was encouraging to discover that with one voice these firms placed a training in English first in their requirements", no other quotation from this Report could possibly emphasize the fact that teachers of English have been living entirely in a world of their own. The Committee found it "encouraging to discover" what the business world has been announcing for many years, with a voice of thunder.

Apart from this Questionnaire, no evidence seems to be taken from representatives of business. A careful search of the list of witnesses fails to reveal anyone not closely connected with the teaching profession, and it was left to Sir Stanley Leathes, the first Commissioner,

to put what he said were the views of the Civil Service Commissioners, but which are actually the views of most of the business men with whom I have discussed the subject. Sir Stanley Leathes, said that the Civil Service Commissioners "hold very strongly that effective teaching and practice in the use and comprehension of English is a subject literally of first importance in all education at whatever stage. In the best candidates, in their opinion, fair results are actually obtained but among the weaker candidates it is clear that instruction, for one reason or another, is very ineffective. They are certain that it should be possible to improve it." These are the views of the Civil Service Commissioners who examine what one can fairly call the cream of the products of the schools. While, from my own experience I know that quite a large number of candidates take part in Civil Service Examinations without having the slightest hope of success, yet it can safely be said that, on the whole, the entrants for Civil Service Examinations represent very much higher than the average quality. At any rate, there must be a very large proportion of the pupils of our schools who could not measure up within reasonable distance of even the simplest of these Examinations. I set out below the Examination in English set by the Civil Service Commissioners to candidates for positions as Typists in the Government Service.

The minimum age of these girls is eighteen, and a very large number of the successful candidates have passed a School Leaving Certificate or an equivalent in Scotland - whence, apparently, the majority of the successful candidates come.

The Civil Service Commissioners are not testing knowledge, but from what I have been able to judge through a fairly extensive acquaintance with their type of examination - the ability to understand relatively simple things and to express that understanding in clear and simple English. This is one of the representations that can be made against our present system of education - that the pupils can do relatively difficult things sufficiently well to get a Pass mark, but that they cannot do simple things correctly. This applies very largely both to English and Mathematics. Actually the Civil Service Commissioners find it necessary to test the English of the candidates for Class I. appointments. These candidates are between 22 and 24 years of age, and a First Class Honours Degree represents the minimum acquirement for possible success, yet the Civil Service Commissioners say of them:- "We consider that all well-educated young men should be able to use the English language skilfully and accurately, and to grasp its meaning readily and correctly". Accordingly, Sir Stanley Leathes informs us:-

"In the new Class I. Examination English will be tested -

- (1) by an Essay
- (2) by a paper called "English, Other Tests".
- (3) by a general paper of scientific questions.
- (4) by a similar paper on political and social questions.
- (5) by translation papers from one foreign language.

The last three of these tests will serve other purposes besides the testing of English, but the first two will be mainly, if not wholly, tests in the use and comprehension of English."

Very little comment was made by the Departmental Committee on this statement and yet it is an amazing indictment. If the Civil Service Commissioners find it necessary to test the ability of the best products of our universities to express themselves in English can it be doubted then, that the business community has some justification for its complaint that the products of our schools do lack the power of communication in English. The experience of the Civil Service examiners is precisely the experience of all engaged in business, that it is an unusual thing to get a student with the ability to write simple straightforward English. The Civil Service examiners put forward precis-writing as a fine exercise to test their English. As a matter of fact, this type of exercise, if the matter is well chosen, provides a very thorough training in many other respects. To be able to read a fairly lengthy passage, to extract therefrom the salient points and to re-assemble them and set them out in

logical order, is a test that can be made to reveal many qualities at the same time. It may be objected that this is a type of examination that can be easily prepared for. So much the better. A precis can never become a mechanical thing, the pupil must first understand, must exercise his wits in sifting out what is essential and what merely incidental or ornamental, and in doing this, he learns to do what is a rare thing with young people, he learns really to pause and consider. It seems to me that one effect of the present system of English education is that students are never encouraged to appreciate the exact meaning of what they read; an approximation satisfies.

There is not much that we can do in our type of school in the relatively short time at our disposal, and, having regard to the long period of training that students have already undergone. In preparing students for these examinations over a number of years, I have been profoundly moved to note how relatively stupid persons have been able to pass the School Leaving Certificate. Any student who has passed this examination should be able to punctuate and paragraph the type of matter I have quoted earlier. These speeches are dictated, and the students write them in shorthand, thereafter proceeding to write them or type them. It really represents the familiar dictation, but read at a speed approximating to reality. Over and over again, I have found students quite unable to punctuate and

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paragraph intelligently, sometimes putting in a full stop in the wrong place, and completely altering the sense of the passage. I do not want to be misunderstood. Students with the School Leaving Certificate are, on the whole, much better than those who have not, but it is obvious, after examining many hundreds of transcripts, that failure to spell, punctuate, and paragraph is not a bar to success in the English examination of the School Leaving Certificate. It is evident to me that the information conveyed is of much more importance than the manner in which that information is conveyed. The examination seems to be an examination in literature rather than a test of the candidates' ability to use the English language. Even those who are relatively quite good do not exhibit any great care over their expression. Time should be spent in the post-primary schools in getting students to explain in their own words the substance of a lesson. I feel certain that if training of this kind were carried out, there would be no less 'knowledge' retained, because the very act of stating the facts would help to fix them in the pupil's mind; not only so but the teacher would be able to correct immediately any false impressions and, what is more important, there would be much more life in such a class-room.

Much of the Departmental Committee's Report on English is taken up with a denunciation of the fact that

many examinations actually make it a paying proposition to acquire literature from a literary history book rather than from actual reading. I feel, however, that in any well-ordered course in English a section of it should be devoted to the history of English Literature. This is quite a different matter from saying that a student is well-qualified in English because that student has passed an examination in the History of Literature. That is, broadly speaking, the present state of affairs; the trouble is that most syllabuses pre-suppose that young people of 16 years of age can have read an enormous number of books and have first-hand knowledge of them sufficient to answer very definite questions. The truth is that, at the age of 16 the student can have read very little when regard is had to the other subjects and interests in the school, recourse is naturally had to the primer of literature, and second-hand information is given where first-hand knowledge is supposed to be expressed. The fault here lies in expecting the first-hand knowledge of too much. The History of Literature ought, in my opinion, to occupy a place - a minor place - in an English examination. It is right and proper that a student leaving school should have a bird's-eye view of the whole course of English Literature. Certain books can be read for pleasure, others read more seriously, while representative poems of every period may be studied in detail and some of the best extracts

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learned by heart. I ~~do~~ think that this is a service that the school ought to provide as it opens up a wide vista to the pupil, and that is all the school can be expected to do in this respect by the age of 16. The pupil may be attracted by one period or author after he has left school, and he may turn to that period or author later on. To confine his attention only to those books he can himself read would probably be to shut him out for ever from many things that might delight him in later life. He will have a background of knowledge that will affect his roving fancy.

That the complaints of business are well-founded is aptly illustrated by the Report on "The School Certificate Examination" recently issued. In paragraph 70 of that Report they put this question to themselves: "Should a reasonable command of English be required as a condition of obtaining a Certificate?" That such a question could originate in the minds of a body of teachers indicates how perverted is the idea of what a training in English should consist. Their answer, if mildly expressed, is a step in the right direction. "The investigators are in agreement with these examining bodies who take steps of one kind or another as described in the previous section, to prevent the awarding of Certificates to candidates who can only be classed as illiterate." When it is considered that the School Leaving Certificate is the summit of the

secondary school pupil's ambition, and the relatively meagre percentage of all students who reach that standard, the suggestion that it has ever been possible for anyone frankly illiterate to pass that Examination is indeed a startling one. "The investigators have found much evidence that, at present, Certificates may be granted to candidates whose English is lamentably weak, and they consider it essential that some procedure as is here suggested should be made a reality by all examining bodies." They go on hopefully to state:-

"The investigators consider that proficiency in the use and understanding of the language should be the primary requirement of an examination in English at this stage. The study of a syllabus in literature, however valuable is not indispensable in the same way that a practical mastery of English is indispensable. They deprecate any subordination of the language to the literature part of the examination, and therefore recommend:-

- (a) That at least half the time available for the examination and half the total maximum marks should be allotted to the language paper.
- (b) That one of the conditions for Pass or Credit in English should be that Pass or Credit standard has been reached in the language paper.

(This suggestion accords with the present Practice of at least one examining body.)"

One body' And there are eight of them, setting papers in English and issuing School Leaving Certificates. Not only is it possible to pass in English and be still classed as illiterate but, if the memory will only carry the student far enough, he may actually get Credit in

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English and yet remain illiterate. That it is so, I have known for a long time. Often on mentioning to a parent that her daughter is rather weak in English, I have been met with the withering statement "She got a Credit in English" and such is the prestige of the examination that I am silenced for ever.

I have not touched extensively on the question of Literature, it is not that I do not regard it as important, but that there is no space here for a detailed discussion of it. I will say only this: a study of Literature cannot go far in advance of the study of language, it is otherwise a barren study, and the only good that is got out of it is emotional. I cannot believe that a student who is unable to write reasonably simple English can profit from a detailed study of an English classic. The study of English, therefore, should be of a very definite character and we ought to consider that English teaching is a failure unless it enables a pupil to make simple statements in a clear and lucid manner. That ought to be the uppermost thought, at all times, in the teaching of English. I do not propose to touch more than generally on the question of grammar, except to say that much of the present situation is due to the fact that, as a body, teachers do not understand grammar and, therefore, that they are unable to teach it. I have heard teachers, over and over again, declaim against

grammar as being absolutely useless, but these same teachers were in no position to give any opinion on the matter at all, for the simple reason that they had devoted little or no attention to the subject. We pass to the consideration of the courses provided by the Training Colleges. Every teacher, we have said, must be a teacher of English. But we have been told very definitely by Training College witnesses that numbers of students arrive at College ill found in respect of English, and that this applies to pupils from Secondary Schools as well as to rural pupil-teachers. Such students are said to be not only without a taste for reading, but defective in capacity for using or understanding English, as well as ill-trained, it may be, in speech and in reading aloud. To the question "What proportion of the students who pass from College with Certificates every year are really qualified to take English with a class?" the answer was given by the English Section of the Training College Association:- "Certainly not more than one-third". The following are representatives extracts from the oral evidence of the Training College Association witnesses.

"Less than half the students when they came up were able to read respectably, and they could not even pronounce words correctly."

"Reading aloud was improving and was more natural than it used to be. Tales for children they read quite well, but in the case, e.g., of a newspaper article they soon got out of their depth and then read abominably."

"They attended not to what they read but to the art of reading. Though ignorant of the meaning of the words, they had learnt to modulate their voices in the most artful manner, which at first was most deceptive."

"Their reading was better than their writing, and they could read poetry better than prose. They failed in writing because they had nothing to say."

"Considering that the students were 18 years old, the writing both in matter and style was usually poor and there were few who had any love for reading."

"They were more defective in composition than in reading. They made elementary faults in a simple sentence, they had not the power of putting things together logically, but the root evil was they had nothing to say."

A Training College witness also stated:-

"Among all the women students who have entered this College this year, not one, according to her written statement, is fond of reading books: very few read anything but novels."

A University College witness:-

"Only seldom were the students when they come to the Training College capable of expressing themselves in English. Their punctuation was very poor, and they showed no appreciation of balance and rhythm, style or form. The standard was also deplorably bad in the case of students taking University degrees."

The historic reason for the neglect of grammar is well-known. It was treated as a subject in itself and thus was one of the main reasons for its past unpopularity and its disappearance. The old formal grammar was the analysis of the English language by the experts and, being presented to the pupils in the same form, was unintelligible to them and became a mere rigmarole. Grammar then

disappeared, in the oft-quoted words of an Inspector of the time, "to the joy of the teacher and the pupil". I cannot think, however, that, save in exceptional cases, it is possible for any child to write grammatically without an appreciation of the general rules of grammar. But these rules should not be presented as something apart from the language. All the principal parts of speech should be known to the pupils, not by way of definition, but by way of appreciation. Definite reasons must be given on the use of the different parts of speech by the construction of definite sentences embodying those parts of speech. These must be given to the pupils and they should represent a very high standard of English, and the pupils should be exercised in the building up of similar sentences. For instance in the study of Relative Pronouns, students should not be asked, in the first instance, to give examples, but they should be given simple sentences to convert into complex sentences, using the appropriate Relative Pronouns - not that I would even mention the words simple and complex. I have very vivid recollections, myself, of learning definitions such as; "A noun is the name of any person, place or thing". Pupils do not learn to write English by learning the definitions of simple and complex, but by appreciation of what these are, and by exhibiting that appreciation in the writing of sentences. I am sure that

this type of work - word-building and sentence-building - is left off much too early in our schools, for until a child can say a simple thing in a straightforward way, that child has not begun to be educated.

The Departmental Committee's Report, in dealing with the question of grammar, dismissed it thus:-

"For practical purposes, all that will be required is the creation of a habit of correct speech and this can be effected through the reading of literature and the writing of compositions."

But even after allowing for the elasticity of the English language, there are sufficient general truths to allow the teacher to give some practical reason why a particular mistake is a mistake, other than the purely arbitrary statement that we do not speak or write in that manner.

THE TEACHING OF MATHEMATICS.

Summary. The mathematical needs of ordinary life, it is suggested, are very small compared with the amount of time that is usually devoted to mathematics. The whole process is one in which facts are learned with but a minimum of understanding. It is found that students who have been successful in mathematics at a School Leaving examination are incapable of performing simple matters of a mathematical nature. The suggestion is put forward that familiarity with mathematical ideas and the working of practical problems involving these ideas is of much greater importance than the learning more or less by rote the theorems of Euclid and the attendant riders. Mathematics, it is alleged has become a learning process and much of the content of school mathematics is not worth learning unless the subject is being pursued further.

MATHEMATICS.

"The human mind is, moreover, so constituted that pursuits which we take up as a means to an end, become for us, not infrequently, ends in themselves."

..... Logan Pearsall Smith.

This universal tendency, noticed by Mr. L. P. Smith will help to put the consideration of the teaching of Mathematics in proper perspective. Book after book on Educational Psychology plunges straight away into the way of teaching Mathematics, and very seldom do we find one that stops to ask the question 'why we teach Mathematics'. Yet I think it would be salutary to stop occasionally and ask ourselves why we do teach Mathematics. After all, isn't it one of the chief words used by the mathematician - 'why'? Now and again, we find such general statements as that Mathematics is one of the major achievements of mankind, and that obviously any pupil who leaves school without having a knowledge of this major achievement cannot be said to be educated. Sometimes too, we have mathematicians stating that no person who has not a knowledge of the calculus can possibly be said to be an educated person. Point of view, of course, is everything in this respect, but if we are to take this statement literally then we certainly have a very long way to go. What then are the

mathematical needs of the pupil who is going out into the great world of commerce? In the first place, he will need the minimum requirements of life in general. What are those requirements? Roughly speaking, one-fifth of the time spent in school is devoted to Mathematics in one of its various forms. The actual needs of every-day life are very small. An ability in the four simple rules, addition, subtraction, multiplication and division, and not a very great deal of these, an ability to look after his own personal cash to ensure that he gets the right change and is not cheated by an unscrupulous but more adept mathematician: a reasonable acquaintance with the ordinary geometrical figures, circle, square, rectangle, and so on: a nodding acquaintance with interest and percentage. An ability to see that in general, if six articles cost one shilling each one will cost twopence, but beyond this the actual needs of life do not go. Mathematics, is, of course, the basis of many professions and branches of science, of astronomy, physics and mechanics, bridge-building, ship-building, and engineering in general. In so far as it is to be studied for these professions then it may be said to be studied for its utility. But our students are destined for commerce and a subject that hitherto has taken up about one-fifth of the time must be able to justify itself on grounds other than the purely utilitarian. At one

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unfortunate and rather lengthy period in the history of the elementary schools, arithmetic was purely a mechanical affair - three sums and a problem was the annual goal - and as the bread, not to say a little butter, of the teacher depended at one time on the success of his pupils in the examination, the teaching naturally confined itself throughout the school year to a preparation for this examination. When the schools were released from this awful burden, the reaction was bound to be great, and the teaching of arithmetic bounded to the opposite extreme. From this time onward, reason was to take the place of mechanical work; now was to be the reign of intelligence; but later, psychologists came upon the scene and destroyed this beautiful assumption, and the method of destruction seemed so simple and so convincing. Training in Latin made the pupil good at Latin, training in grammar made the pupil good in grammar, training in mathematics made the pupil good at mathematics, but there was no transfer of this goodness, this ability acquired in one subject to any other subject. "A generalised habit is a psychological myth" wrote W. C. Bagley, and that seemed to clinch the matter. Our up-to-date books now refer quite casually to the now discredited theory of formal training, and yet I think they have proved too much. The fault seems to me to lie both in the original statement of the theory of formal training, and in the formalism of the training. In the study of any subject, is the only

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thing acquired an ability in that subject? If that were the case, then I would say that the amount of transfer, if any, were very small.

One of the greatest mistakes that is made in teaching is to imagine that because a pupil is able to repeat a proof, for instance, of a geometrical proposition, or is able to solve a problem in arithmetic or algebra that the pupil really understands what he is doing. I have two main criticisms to make with regard to mathematical teaching: the teaching is too mechanical and not mechanical enough, or to put it in another way, things that should be made mechanical receive insufficient drilling and others that should be built up each time are resolved into special types and thereafter worked mechanically. In arithmetic there is a large number of things that must be made mechanical, that must become unconscious processes in order to allow the attention to be focussed on the conscious process. As I have explained, my students generally have ceased to do arithmetic some little time before they reach me, while I have also to deal with girls of eighteen, who are taking arithmetic in the examination for typists and clerk-typists in the Government service. I shall never forget my original amazement at seeing students held up completely by inability to do an addition or a multiplication in the

course of working out a sum in arithmetic. By the time this mechanical operation was performed, it was impossible to pick up the threads again. The focus of attention had been occupied by what ought to have been an automatic process. I have made it a practice to ask teachers who train pupils of eleven plus, if they ever give their pupils exercise in the four simple rules, and almost invariably the answer is that the students have done all that in the previous year. Discrimination is necessary here. Surely it should be obvious that the ability to perform these simple operations quickly and accurately is an indispensable adjunct to success in arithmetic. That should certainly be a function of teachers in the earlier years. The multiplication tables should be said like lightning, not only in sequence, but in any order. Consistent drilling in the earlier stages is absolutely necessary, but drilling a few minutes at the beginning of each arithmetic lesson would ensure that the work was kept up. The main tables in ordinary use should be drilled in the same way - but only those in ordinary use. When it is found necessary to deal with the less common, then there is no harm at all in giving the students the particular tables. No effort should be spent in learning anything else but the most common tables, but no effort should be spared to see that these common

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tables are known completely. The fractional parts of the £. and other items of this nature should also be part of the student, for they come in at all times into calculation. When a student is taking up a new process, the new process should have all the attention and unless these fundamental things are automatic, chaos will result. The few minutes drill at the beginning of a lesson not only keeps fresh this very necessary work, but it can decide the atmosphere in which the subsequent lessons are performed. It is surely contributing something to the general good that a class should be accustomed to approaching its task in an alert frame of mind in a proper atmosphere. Of course, it may be said that a teacher could create this attitude of mind with any subject, but that is hardly possible. Certain subjects require the co-operation of the student, and arithmetic is one in which conscious ideals can be set up. The same is true, in greater degree, of other branches of mathematics, especially geometry. Most teachers of mathematics have been trained in secondary schools, and have passed through their mathematical course in the prescribed fashion. The inclusion of mathematics in a Central Commercial School curriculum will almost certainly, in the nature of things, bring about a course somewhat similar to that which the teacher himself has undergone. It is my firm contention that in arithmetic, algebra, and

geometry, the ground that is covered, up to School Certificate is much too great, with the result that mathematics is merely a learning process. Each proposition is demonstrated on the blackboard, the students learn it, and are then exercised in as many riders as the syllabus will allow, in the hope that the pupil will become acquainted with a sufficiently large number of examples to enable him to pass the required examination. I am assured that teachers always tell their students to make sure that they have learned the propositions, and that therefore, in the School Certificate, they are sure to get half marks. In the teaching of arithmetic, the point of view is, I submit, entirely wrong. It is too immediate; the teacher is content, in teaching interest sums for example, to build up the formula on the blackboard, and is willing to accept the statement of the pupils that they understand the process. It may be that he elicits quite a bit of the building up from the students, but once having got the formula, thereafter example after example is set and the pupils are, on the whole, quite successful in working them; but when school is over, and the pupils enter that life for which school is a preparation, what happens? The formulæ are forgotten, and the ability to work out the formula is not with the pupil. I do not know how many hundreds of students I have asked to give me some of the formulae connected with interest. Teachers whom I have spoken to on the matter

can hardly credit that the knowledge that took such an enormous amount of energy to impart should disappear so quickly, and one teacher in particular who normally teaches a class of boys and girls of about thirteen simply will not believe it. He thinks I am exaggerating, and over-critical, but it is not so. The barrenness of the training is exemplified by the case of a girl of fourteen, not long left the elementary school and with whom there still lingered some recollection of the formula. The subject was mental arithmetic, and the question, "Find the simple interest on £40. for four months at 5% per annum". Her answer was £8. and she was most certain she was right, because she had done it in the way she was taught at her last school. Of course she had, but she had made the slight mistake of taking the months as years. It may be argued that such a mistake could quite easily have been made though the pupil had not been working through a formula. I do not think so. If she had worked it as a proportion sum, she would have got much closer to the heart of the problem. Working mechanically from the formula, the incongruity of the answer never struck her at all. An interest of £8. on £40, was not too obviously out of the question to draw her attention to it.

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Dr. Ballard is at great pains, in his book "Teaching the Essentials of Arithmetic" to insist on the deletion of the unitary method of proportion, and the substitution of the fractional method. If the point of view is to get sums done in school in the quickest way, then the fractional method is superior, but if the point of view is that the pupil shall be left in his after life with the ability to face up to the simple arithmetical problems of life, then the unitary method is much to be preferred. Dr. Ballard's suggestion is that the teaching should be frankly mechanical, and I have no doubt that, for the time being, worked mechanically, it works splendidly, but my experience is that after leaving off each particular type of sum for any length of time, the mechanical part is forgotten and the student is befogged. Teachers of arithmetic are deluded into the belief that because their pupils can follow out and see the reason for certain mode of solution that they really understand the matter. Here is a very good example. In an arithmetic book published by Grant's occurs the following sum - "Divide $4/6d.$ between two boys such a way that one gets $6d.$ more than the other". The mechanical working out of this sum is a very simple matter for the child of nine, for whom this book is intended,

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but how many of them could actually have solved the problem without assistance? Only a very few, I am afraid, and even most of them would have solved it by trial and error, and not by an understanding of the fundamental principle involved. I happened to mention this particular type of question to a class of teachers and I was immediately informed that this was a favourite type of question in school examinations. I asked some of the teachers whether children could understand the reasoning involved in the question, and was informed that they could, but that it was necessary to keep coming back to the type and to give other examples, otherwise the children would forget. I did not realise how great a hold this particular problem must have on the schools till I tried it on some of my own students, and I saw the glint in some of their eyes which seemed to say "Ah! I know this fellow, let me see". After a short searching of the memory, came the answer. The next time I met this interesting type was in one of Dr. Burt's intelligence tests in arithmetic, a test that was meant for boys up to fourteen years of age. Finally, I find that Dr. Ballard deals with it at length in his chapter on 'Problems' in his book "The Essentials of Arithmetic". This is what he says:-

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"To put it in another way, a pupil's capacity to work a given problem depends partly on his native intelligence (for which the teacher is not responsible) and partly on his familiarity with similar instances (for which the teacher is responsible). Hence the only thing a teacher can do is to teach as many types as possible. It is of small avail to let the pupil loose among a multitude of new and miscellaneous problems in the hope that by sheer force of intellect he will solve them for himself. He will simply miss his way and lose his courage. To secure progress in arithmetic we must organize the material, we must classify and cross-classify, we must help our pupils to discern an underlying similarity of pattern in a large variety of examples. We must, in fact, reduce our examples to types, and teach the types. The commoner the type, the more important it is to teach it. Simple addition, simple multiplication, and so forth, are of such wide applicability that nobody has doubted the wisdom of fixing a standard procedure. If justification were needed for teaching the "rules" in arithmetic it would be found in the fact that a large number of sums fall into the same pattern, and when the pattern is known, the difficulties due to change of material can be coped with by all but the dullest. But though nobody has doubted the wisdom of revealing the way in which the commoner sums fall into distinct types or patterns, many people have doubted the wisdom of treating problems in this manner. Problems are supposed by them to belong to a province of their own - a land of anarchy and confusion, where every member is a law unto himself. But as I have already shown, there is no clear line of demarcation between the mechanical sum and the problem; and there need be no point at which we must cease classifying. We classify as far as it is expedient, and no further.

Let us consider these two examples:

- (a) Share $3/10d.$ equally between two boys.
- (b) Share $3/10d.$ between two boys so that one has $6d.$ more than the other.

Most teachers would pronounce the first a routine sum, and the second a problem. The first is a simple sum in division of money. The rule having been definitely taught, the precise mode of procedure is familiar to the pupil. Although he may never have

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actually divided $3/10d.$ by two in his life before, he has done something so like it that the operation presents no difficulty to him. There is nothing new in the pattern: there is no problem.

The second example has so frequently appeared in recent arithmetic tests that it has come to be regarded as a definite type. To the average pupil it has become a routine sum. He is familiar with the rites to be observed; he has seen a sample worked on the blackboard, and has worked others on the same model. There is nothing newer to him in the second example than in the first, and the second is just as much a mechanical sum as the first.

Let us suppose, however, that the pupil has encountered this kind of sum for the first time. It would then be a genuine problem. To me, at the mature age of twenty, although I had read a fair amount of mathematics, it was a genuine problem. I paid a bill for two, and my companion had to settle with me afterwards. I forget the exact amounts, but we will assume them to be the same as in example (b) above. My companion had to pay $6d.$ more than I. I well remember that we were both a little puzzled how to proceed. After a moment's thought I suggested that we should halve the whole bill, halve the difference between our shares, and add the half difference to make the larger share, and subtract it to make the smaller. Thus my bill would come to $1/11d. - 3d.$ and my friend's to $1/11d. plus 3d.$ The method was clumsy, but the reasoning was sound and the solution was correct. Children are taught nowadays to put the difference ($6d.$) aside the divide the remainder. Half the remainder gives one share, and half the remainder plus $6d.$ gives the other. They are taught to take these steps in regular order as a fixed piece of procedure. The self-same example which a generation ago was a problem to a youth of twenty is nowadays a routine sum to a child of ten."

This I think, is indicative of the appositeness of the quotation at the head of this chapter. Arithmetic for Dr. Ballard has become an end in itself. The truth

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is that the child of ten, when he becomes a youth of twenty will be in the same sad state as Dr. Ballard himself was, unless, by some trick of the memory, this particular type out of the hundred-and-one types he has undergone at school, still survives.

If this is the attitude of mind of teachers of arithmetic then I would suggest that not only will there be no transfer of ability, ^{but there is no real ability} for it is wholly transitory. Civil Service Commissioners and the business world stand in somewhat analagous positions so far as the judging of the arithmetical abilities of the products of the schools are concerned. The bright little child of ten, when she becomes a young lady of eighteen is presented with this examination paper by the Civil Service Commissioners, and what she could do so easily at ten or eleven, she makes a sorry hash of in her maturer years. I would submit that this examination paper represents a fair test. It can be no valid argument that the examinee has not done any arithmetic for some time, for the questions set are such as should be answered by any reasonably educated person, no matter what age. It represents, I submit, the type of arithmetical work that should be performed by anyone at any period of life. School is supposed to be an education for life; too often it is, at each successive stage, but an education for the next examination.

The trouble from Dr. Ballard's point of view is that the Civil Service Commissioners have exercised much ingenuity ~~in~~ setting these sums, and they cannot readily be classified into groups and drilled on. Large numbers of girls who have taken the School Leaving Certificate in mathematics take this examination and do badly therein. Is there then not justification for the statement that mathematics has become a learning process with just that minimum of understanding that will facilitate the learning process. As soon as school days are over, the whole elaborate system topples over like a pack of cards and little is left for all the time that has been spent.

ARITHMETIC

Time allowed, 1 hour.

Give up the question paper separately from the answer book.

SECTION 1. - Do these sums on the question paper, not in the answer book. Add up the columns and write the totals in ink in the spaces below them. If you wish to correct any figure in an answer, strike it through and write the correct figure alongside.

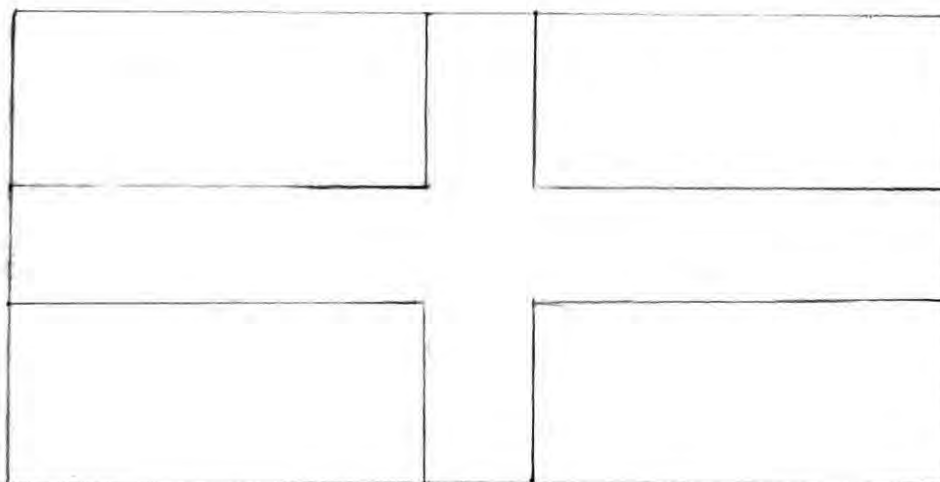
£.	s.	d.	£.	s.	d.	£.	s.	d.
6	1	6		17	6		19	10
3	9	6		12	8½		19	2
	17	9½		19	6	35	17	8
	14	6	9	8	11		7	11
	17	10	19	11	3	16	12	9
2	1	0		5	10		17	6
2	14	2½	24	3	8		12	10
	7	6		5	2	25	4	7
	17	3	9	7	1½		17	10
	12	7	10	14	11½	40	0	11
7	12	7		7	0	2	10	4
	17	3	2	3	5	3	11	8
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SECTION 11. - Do these questions in answer book.

- The tickets sold for a concert were 75 at 2s., 94 at 1s. 6d., and 143 at 1s. If the cost of the hall was two guineas plus a charge of 3d. a head how much was the clear gain?
- In a certain town the electricity supply was cut off from ten minutes to five till five minutes past six and at the moment it failed a householder lighted her only candle. This was 4 inches long and burnt at the rate of 0.25 inch every 4 minutes. At what time was it used up and how long was the householder then left in darkness?

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3. An empty motor bus weighs 6 tons $7\frac{1}{2}$ cwt. Including passengers, the total weight for which it is licensed, is 9 tons.
If it has 56 passengers aboard of average weight 9 stone 10 lbs., by how many cwt. is it overweight? and what percentage is this overweight of the total amount licensed?
4. The figure below shows a pattern for a red cross on a white ground and is drawn on a scale of $1/10$. How much red wool to the nearest 50 grammes, will it take to work the cross if 10 grammes of wool is used up on 40 sq. cm.?
Write your measurements in your answer-book.



It will, I know, surprise many people engaged in teaching Mathematics for the School Leaving Certificate to know that the Civil Service Commissioners find it necessary or think it advisable to give simple addition sums in money in an examination for young ladies of eighteen years of age - and to give marks for accuracy in this respect. These young ladies are variously occupied - in the Labour Exchanges, in Bankruptcy Courts, and in Income Tax Offices, and so on, and part of their ordinary duty will very likely consist of some simple work in the addition of money. These Government Offices are not unlike the ordinary business office into which are graduated other youths or maidens, and the business world demands that they shall be reasonably competent at simple work of this nature, and the business world periodically complains in public about the inability of the products of the schools to do these simple things accurately. But our educators metaphorically shrug their shoulders, and if they do deign to reply, generally refer vaguely to 'uninformed criticism.' Here is what Dr. Ballard says on this point; the remarks are taken from a pre-war report on the teaching of mathematics in London elementary schools:-

"The business employer seems to me to attach far too much importance to a lad's actual skill - and that of a very limited kind - at the time of his entering an office, and far too little importance to his possibilities of development. Rapidity in calculation

may be vastly improved by a few months' practice; a trained intelligence is the product of an education extending over many years. Unguided mechanical practice will secure the one; much intelligent guidance is necessary for the other. The employer, in fact, often shows a preference for the cheaper and more showy article."

Anyone who knows the inside of an office is well aware of the fact that involved computation is seldom asked for; what the business employer demands is not this, but absolute accuracy in simple calculations. He complains - and in my experience his claim is well-founded - that the average product, especially of the secondary school is unable to do these simple things accurately, and the business man is apt to judge the value of the school's work from his experience in such matters. Dr. H. H. Turner, Savilian, Professor of Astronomy in Oxford University, writing on practical mathematics in Public Schools, says:-

"The interest shown crops up at various points. Mr. Siddons of Harrow refers to the increased interest in arithmetic i.e., in getting sums actually right instead of merely showing knowledge of method. As one who has lectured on Astronomy for nearly twenty years, I can well appreciate the point. Mathematicians, especially those of considerable ability, have often been curiously unable to get a correct numerical result, chiefly through want of attention. It has been my custom to draw the attention of my classes to the importance of correcting this habit, by the example of nautical Astronomy "If you get the sum wrong, you may sink the ship". If interest is aroused in the result for its own sake, there is little difficulty in getting the sums correctly done."

Suppose we now look at it from a broader and more general point of view. Professor Dewey says somewhere:- "The future of our civilisation depends upon the widening spread and deepening hold of the scientific habit of mind." Again, Sir Arthur Helps has said "I do not know anything except it be humility, so valuable in education as accuracy. Direct lies told to the world are as dust in the balance when weighed against the falsehoods of inaccuracy. And accuracy can be taught." The attitude of the schools in this matter is fairly summed up in the extract quoted above from Dr. Ballard's report. Accuracy - and it always seems to have the word mechanical as an indispensable and depreciatory accompaniment - is regarded as somewhat inferior, the "cheaper and more showy article". But surely accuracy is the very soul of scientific method. It is not so much a question of mechanical working as a matter of outlook. If in the mathematical class-room, there is always held up the ideal of accuracy, then I am quite sure, although it may appear an old-fashioned doctrine, that the pupils will carry into their other work, will carry into life, such an ideal. If, on the other hand, all mathematical instruction is classified into patterns, and pupils get an illustration of each pattern, according to which they work all other problems of like nature, then I am quite certain not only is there

no 'transfer' but the time in the mathematical class-room is largely wasted. Accuracy can be taught by the inculcation of an ideal of accuracy, and simple mathematics - simple arithmetic - is an excellent vehicle for the inculcation of this ideal.

The text-books so far published on commercial arithmetic do not nearly exhaust the possibilities of arithmetic as applied to commerce. That, of course, is the result of the great gulf existing between schools and commerce, for the makers of text-books have little or no knowledge of the business world, and many of the so-called commercial questions are quite unreal. The questions in arithmetic need not all be of a mercantile nature. Every student in our schools is a future citizen and as such should know something about, for example, insurance. Insurance of various kinds is a very important part of every citizen's life, yet it is a question that is touched upon in no branch of education except in such classes as may be organised in advanced evening schools for those students who are engaged professionally in the insurance world. Our educators apparently think it essential in arithmetic to make sure that if we dine out with a companion, we will be able to divide up the bill accurately. Yet there are innumerable sums possible connected with insurance and with many other branches of life. Insurance only forms a good

example. So great is the ignorance on the subject that the industrial assurance companies spend something like fifty per cent. of their income on what they call 'getting business'. It cannot be contended that the principles of insurance are too difficult for young people to understand. A simple statement of the principles even to students of twelve years of age would provide the essential background to a very large variety of practical sums in arithmetic. Similarly, National Health Insurance, Employment Insurance, might furnish a fertile field. Where existing arithmetic does impinge on commerce it very frequently conveys quite erroneous impressions. Many writers on arithmetic are sceptical of the advantage of trying to teach English or any other subject incidentally in the course of arithmetic. But their problems of a commercial nature do something infinitely worse - they create definitely wrong impressions and provide the student with a background that will be a positive hindrance to him. We have some problems of this nature. A grocer bought one gross tins of salmon at $10/6d.$ per dozen tins, and sold them at $1/2\frac{1}{2}d.$ each. What profit would he make or what was the percentage profit he made on his outlay? Or again: a milliner bought a quantity of material for which she paid $35/-$; she made this up into a dozen hats which she sold for $7/11d.$ each. How much profit

did she make? In sums like these, business is set forth as a delightful game of buying something in relatively large quantities and selling it in smaller quantities at a much higher price per unit, and thus making a profit. It cannot be argued seriously that the pupil is getting unconsciously a dangerous idea of what business is. It is taken for granted that the milliner makes good hats, acceptable hats, which she has only to put into her window for customers to come trooping in with their seven-and-elevenpences. What would happen if we saw such a sum as this in an arithmetic book? A milliner bought material for which she paid 35/- and made it up into a dozen hats which she placed in her window. Few people stopped to look at them but every day only one person thought it worthwhile to enter the shop, and when she tried the hats on, none of them suited her. At the end of the season the milliner went bankrupt and the hats were sold by auction for 5d. each. How much would this transaction contribute to her deficiency? Even here, we have left out all mention of rent, rates, taxes, National Health and Unemployment Insurance, and the hundred-and-one other expenses involved in running a business. But how many excellent milliners start business every year conscious only of the difference between cost-price and selling-price, only to face disillusionment sooner or later. Here is a

type of question I frequently present to students of book-keeping, not primarily as a question in arithmetic, but in order to bring vividly before their minds a certain point. A trader in business buys from a wholesaler £100, worth of goods per month. The terms are that he is to pay for the goods on the 10th of the month following the month of purchase, and that if he does so he is allowed a discount of $2\frac{1}{2}\%$. The trader falls behind in his payments, but in order to keep up his supplies, and in fact to keep in business, he dare not allow more than another month to pass without paying his bills. Assuming then that he manages to pay by the tenth of the month following the due date, what rate of interest is he paying? This might not appeal to the purist in arithmetic. He might object that it is not a sum at all, that the students might not realise what the question is getting at. As a matter of fact I never ask them to work it out, but I do show it to them on the blackboard. In effect, I tell them the trader has had the loan of £97.10. 0 for a month, for which he is compelled to pay an extra £2.10. 0. but instead of paying £97.10. 0 he has to pay £100. 0. 0. That is, he pays roughly nearly $2\frac{1}{2}\%$ per month, which works out at nearly 30%, per annum. When I tell them that if the trader had any security, he could borrow from the bank at the rate of 5%. they realise the big difference, that a trader who had sufficient security is able to borrow money at a cost of 5%. while our mythical

trader has to pay 30%. Almost invariably one of the reasons assigned by a trader in bankruptcy is want of sufficient capital and inability to take advantage of discounts. This is not arithmetic from the book point of view, but it is surely guidance in the acquisition of experience. It is just a question of directing the minds of the pupils in a certain way.

Much progress has been made in recent years in many schools by the introduction of mathematical laboratories where the students do practical work instead of pursuing the formal methods of Euclid. This is not by any means a new thing, having been started at Clifton College in 1875, but in the secondary schools which have sprung up during the last thirty years, not a great deal of progress has been made in this respect. As I have explained in the main part of this thesis, the students I am concerned with do not include the born mathematician. Presumably, they will be found among the 'three per cents.'. But the course in mathematics that would appear to be the most suitable for young people going into commerce would not preclude any of them, at a slightly later stage in their careers, from becoming real mathematicians. My point of view, as I have expressed it several times, is that the ordinary student has been sacrificed all along the line for the sake of the members of the 'three per cents.'. My view is that it is not any use lamenting that if you do not follow such and

such a course you will never have great mathematicians. What proportion of mathematicians does the present method produce - a very meagre one indeed - I am not suggesting it could produce more. But to be set against this is the very large number to whom the study of mathematics involves a tremendous expenditure of time in the learning of propositions, and in the learning of riders in the working out of algebraical sums on an approved and illustrated pattern. As Professor Turner says in the article already quoted from:-

"With practical work, it is much easier to set a boy to think out a thing for himself. Teachers have long realised the difficulty of providing problems which call for spontaneity and not merely for the learning of some rule. There are, for instance, Euclidian riders - but the good ones soon became tabulated, and new ones were either too hard or too easy. In practical work, it is only necessary to vary the dimensions of some of the apparatus in experiments to call for new ingenuity from the boy. You may have just done almost the same experiment."

The teaching of arithmetic should merge gradually into practical mathematics. The proportion of practical to theoretical and the time at which the theoretical work should begin will depend very largely on the abilities of the pupils of each school, but the general principle I would lay down is this: no theoretical work should be done that does not arise naturally out of the practical. That is to say, in the lower grades mathematics will consist

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very largely of practical work, not because we despise theory, or think that the practical is much better than the theoretical, but because it is the only type of mathematics that fits in with the natural aptitudes of the pupils. What these natural aptitudes are can only be found by experiment, but the present system, whereby almost invariably students taking mathematics are forced into the same mould, irrespective of their natural aptitudes, is but a travesty of education. School Leaving Certificate papers in mathematics practically all follow the same lines, propositions and riders, all the propositions are learned, and as many of the riders as can possibly be crammed into the course. The situation in geometry is exactly the same as Dr. Ballard so definitely advocates in arithmetic. Classify and cross-classify and cover as much as you possibly can, so that your pupils will never have the misfortune to face up to a novel situation in the examination room. If you follow the argument out to the logical end, that is the position you must arrive at. Why, out of all the knowledge we might attempt to give our students in school a knowledge of, an ability to say the Euclidian propositions should be considered a worthwhile thing, I fail to understand. Learning by doing is an excellent principle, but it is difficult to get away from traditional methods and it is often, I think, even where doing has been introduced, it is a case

of learning or doing. I do not think there should be any separation in the sense that practical mathematics are done in a laboratory and theoretical mathematics in another class-room. The two should go hand in hand, and the theoretical teased out as the teacher feels that his students are ready for it. Here is a short sketch of the practical course in weighing and measuring at Harrow School;

SKETCH OF THE PRACTICAL COURSE IN MEASURING AND WEIGHING.

- (1) Measurement of length.
 - (a) Straight lines - the connection between the inch and the centimetre.
 - (b) Curved lines - the experimental determination of
- (2) Measurement of area.

Area by counting squares - hence the experimental determination of the rules for finding the areas of rectangles, triangles, and circles.
- (3) Measurement of volume.
 - (a) Volume by building up solids with inch cubes - hence the experimental determination of the rules for finding the volumes of rectangular blocks and solids of uniform cross-section.
 - (b) Capacity by means of graduated cylinder and burette.
 - (c) Volume by displacement - experimental determination of the formula for the volume of a sphere.
- (4) The use of the balance.
 - (a) The connection between the ounce and the gram.
 - (b) Area by weighing.
 - (c) The weight of unit volumes of various substances by direct method.
 - (d) From (c) lead on to the idea of specific gravity and its determination by the specific gravity and its determination by the specific gravity bottle.

The course then goes on to Archimedes' principle, &c., but this part of the work is done by the science masters and, at the time of writing, no arrangements have been made for correlating any arithmetic with that practical work.

A detailed list of apparatus is printed in the note-book used (see p.404), so it is not necessary to give such a list here; but it may be pointed out that the models, &c. used for measuring are simple and familiar, and, so far as possible, reduplication of models is avoided so that the master may be better able to remember the constants for the models.

What are the Aims and Objects of the Course?

- (a) A clearer conception of length, area, and volume
- (b) Some acquaintance with the units of measure and weight, and some slight power of guessing rough approximations to lengths, areas, volumes, and weights without the use of instruments.
- (c) A practical knowledge of how to measure length, area, volume and weight.

- (d) Clearer ideas as to the trustworthiness of results and the folly of giving results to too many significant figures.
- (e) Enormous increase in interest in arithmetic, etc. resulting in increased powers of concentration.
- (f) Training of hand and eye.

It is essential that the teacher should keep these aims and objects perpetually in mind, otherwise the boys will not get the advantages hoped for, and there will be danger of the practical work becoming an additional burden instead of a real help to the Mathematics.

Is there any Waste of Time?

Teachers of a single subject like Mathematics are apt to consider innovations entirely from the point of view of their own subject, instead of from the point of view of the pupil.

We may first consider this from the pupil's point of view. Before the mathematical masters began taking boys through this practical course it was being done by the science masters as a necessary training to other science work so that the recent change, so far as the pupil is concerned, consists merely in the change of master with whom the work is done and, as the new arrangement correlates that work with the other mathematical work, there is nothing but gain from the pupil's point of view.

Now we must consider the mathematical master's point of view. Assuming that there is no increase in the time at the mathematical master's disposal, does not the introduction of practical work take away time that ought to be devoted to other branches of Mathematics? All that is necessary is to reduce the time devoted to arithmetic; the author of this paper has no hesitation in saying that such a change is beneficial, and that the standard of the arithmetic goes up because of the interest gained through the practical work.

For commerce students, there is a wealth of practical work that can be done as a continuation of such a course. Graphs are now used extensively in business, while there are statistics of trade, both of imports and exports, of traffic, income tax, national and local expenditure, of an infinite variety. The reduction of these to graphs and the careful study of the information thus afforded would teach more mathematics and, at the same time, more knowledge of social affairs, than all our present mathematics put together. This is a very important point indeed; mathematical ideas are got far more easily and far more thoroughly by working with them than by learning proofs. Here is, (See fig. I.) for example, a type which can be applied to a large variety of uses in ordinary everyday life.

The making of graphical charts involves the use of a ruler, set-square, T-square, protractor, compass, and even ruling pens. Not much work of this nature seems to be done in this country, and the examples here reproduced are from a book entitled 'Graphical Methods in Education' by Dr. J. Harold Williams, lecturer in education in the University of California. The book is based on a course actually given at Stanford University, but much of the work can be done quite easily by students of fourteen to sixteen years of age, and it would be of especial benefit to students entering the commerce world. (See fig. II.)

FIG. I.

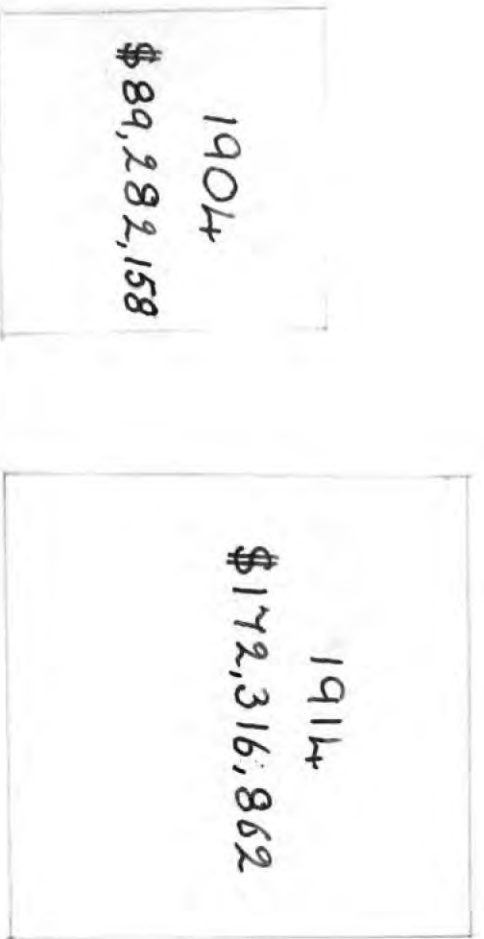


FIG. II



FIG. III



FIG. IV

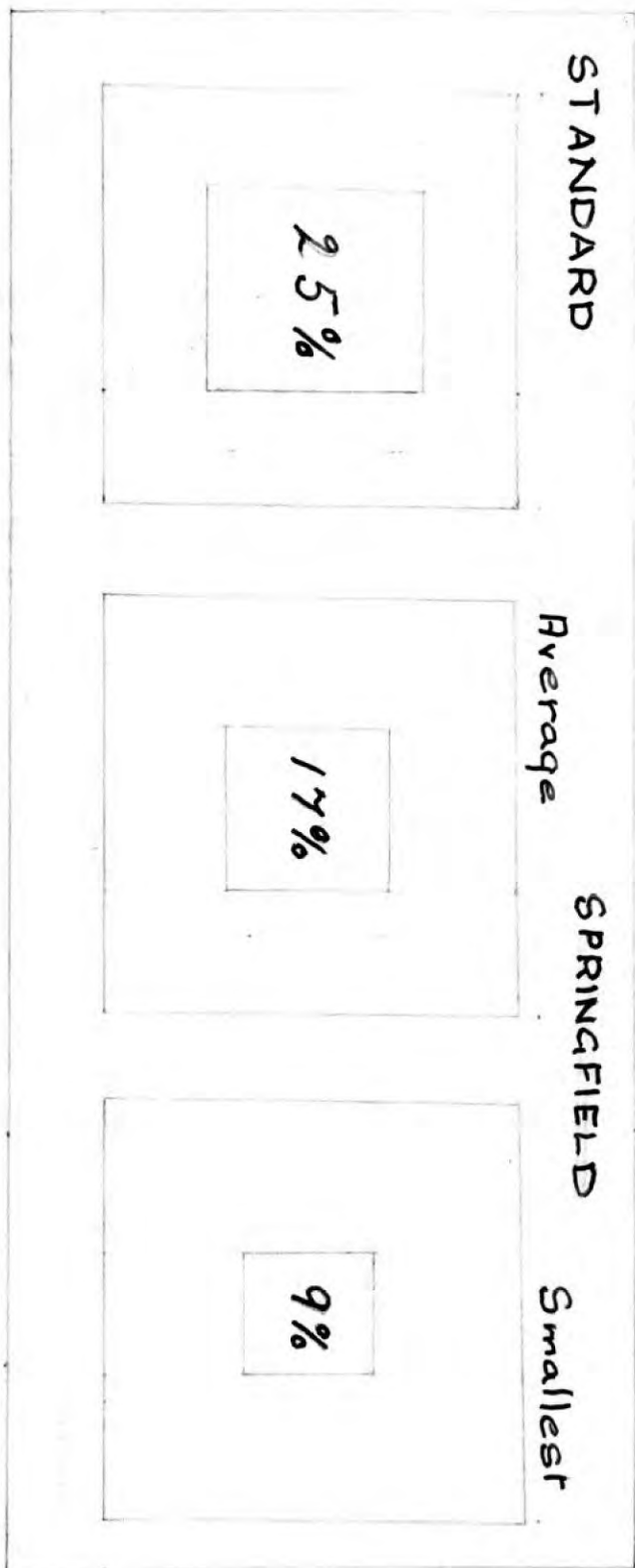
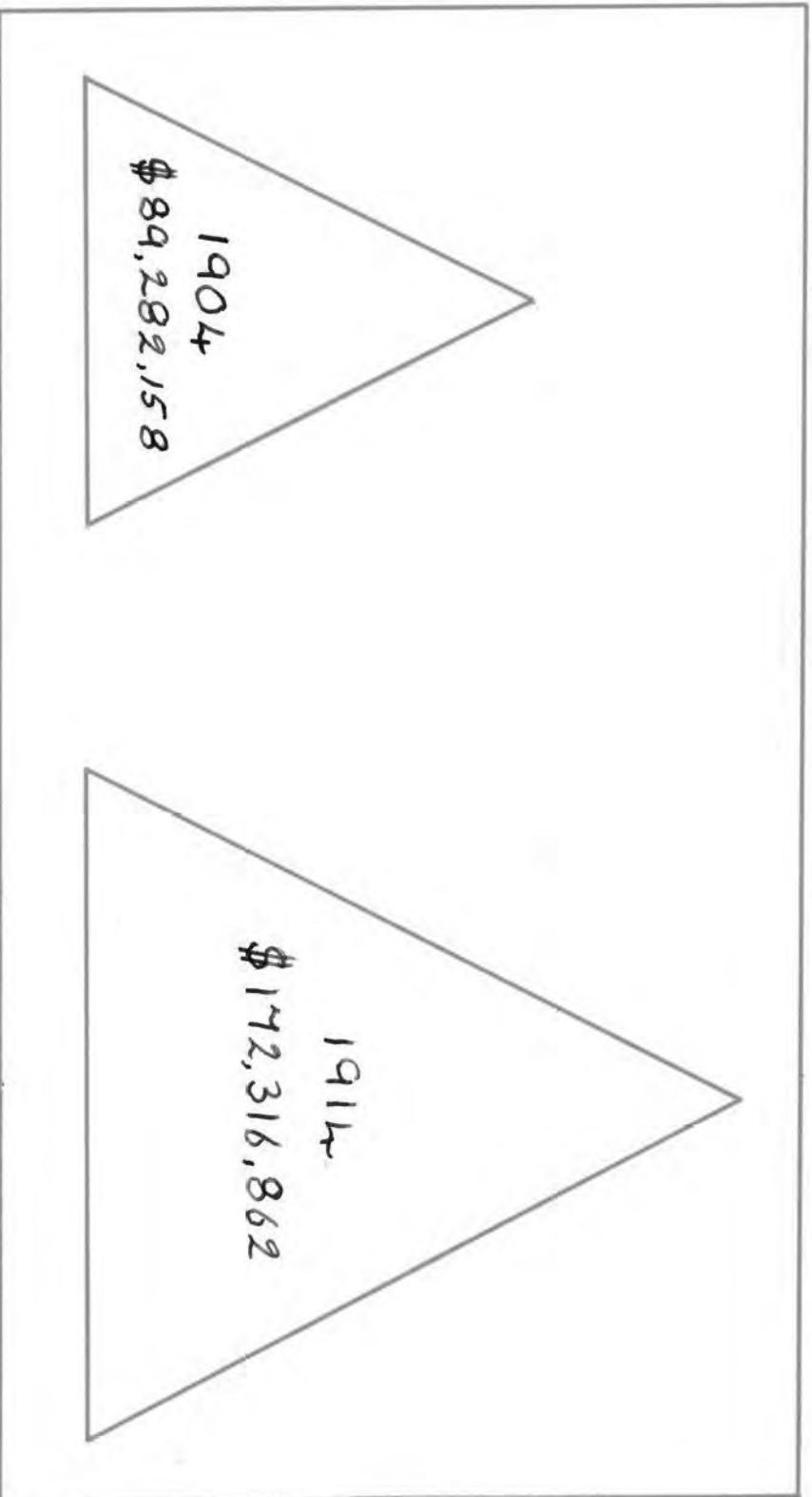


FIG. I



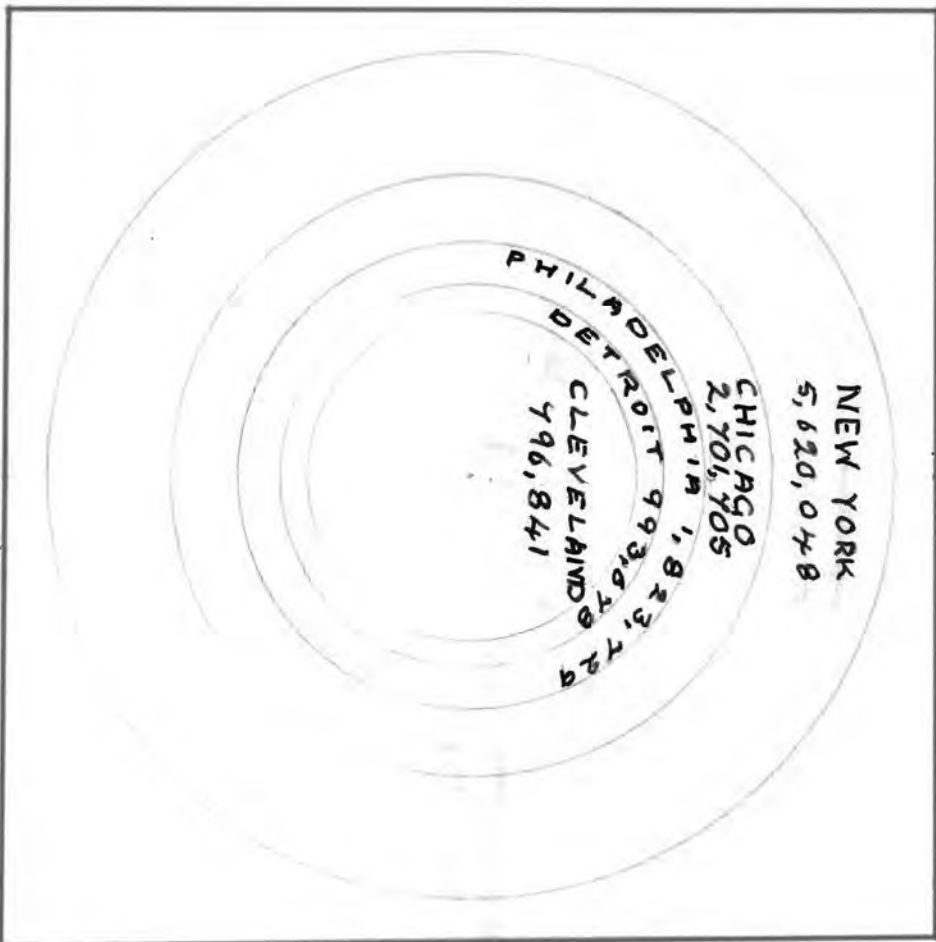


FIG. VI

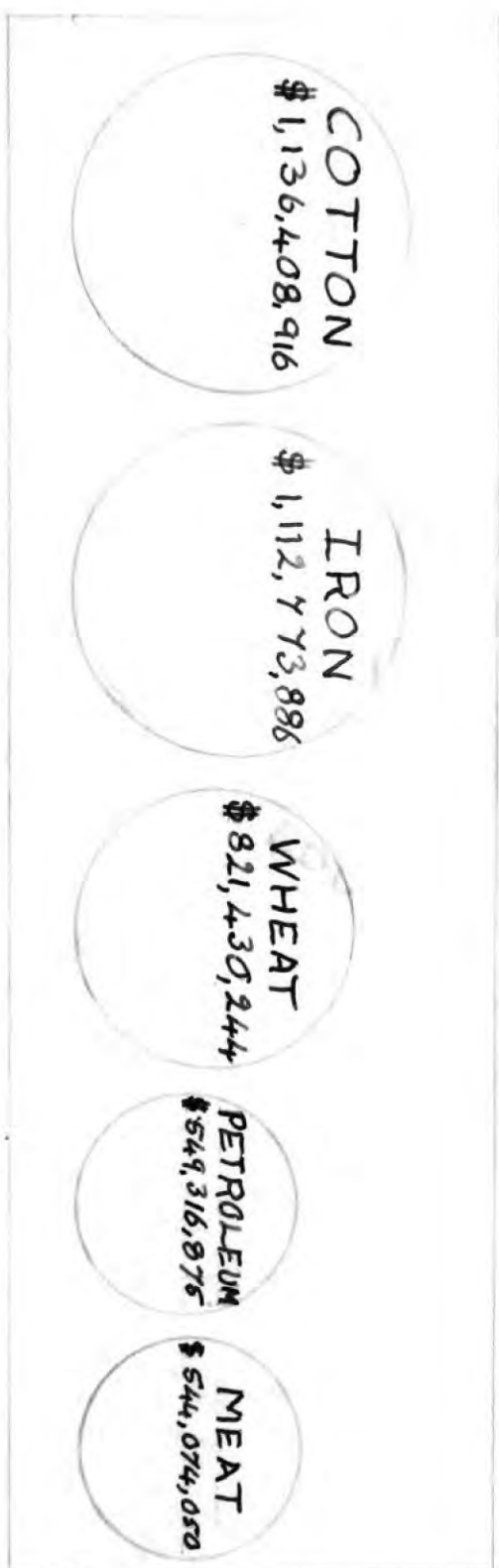


FIG. VII

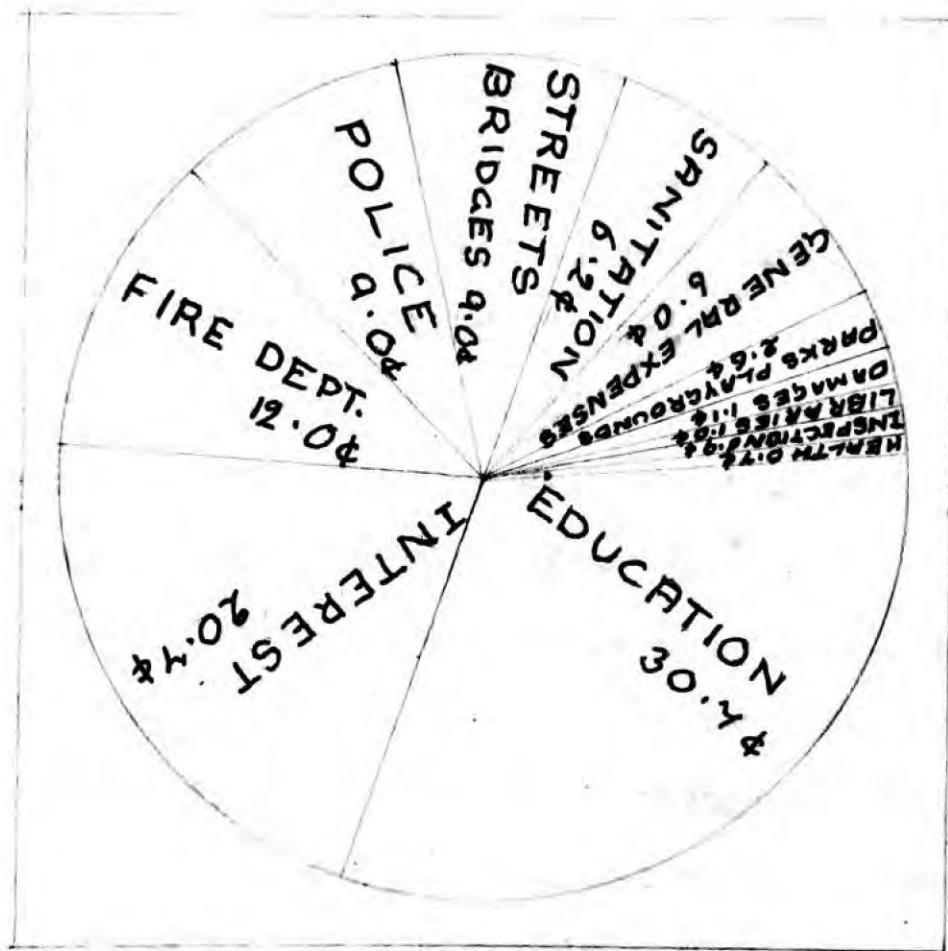


FIG. VIII.

Here is a very simple proposition in area. (see Fig. I)

This is a very practical piece of work, capable of infinite variety, and will appeal to the students. He will feel he is doing something really worthwhile. But it is not by any means quite so simple as it looks at first sight. It involves the determination of the relative areas of the two squares and if it is laid down that the first square is to be 1" or 2", the working out of the second square will supply an excellent practical exercise and would bring out in the student's mind a very clear idea of what area is. The student will feel that he is doing something real and practical, and is not simply an onlooker at the unfolding of a proposition. Here are two others of an analagous nature. (See Figs. II and III)

Figure V deals with the area of the triangles, and the student who has done work of this nature will not have to search his mind for the area of a triangle. He will have been called upon in such a practical manner to work it out, that it will not be for him merely a glib relationship of half base multiplied by height. Figure IV continues the relationship existing between the areas of squares. ~~Figure V deals with rectangles,~~ Figures VI, VII, VIII illustrate problems which involve the calculation of the areas of circles, and it is obvious from these examples that much general information can be instantly acquired.

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The position, therefore, is that a student can obtain - so far as the actual examination is concerned - matriculation standard by the time he is fifteen, but the minimum age for entrance to most Universities is seventeen, and the actual age of entering is, I believe, considerably higher. Most of these abler students go on to take their Higher Certificate, which actually covers a fair amount of the first year work done in the University. This, of course, is only a further argument for the segregation of the 'three per cents.' Even among some of the others, I am sure that if they desired to take up a University Course, then there is ample opportunity between fourteen and eighteen to reach the standard required by the University. The intelligence testers seem to take it as an axiom that their ideal is to determine those students who are definitely capable of profiting by a University Course. But there should be no reason why anyone who can pass the Entrance Examination should not be allowed to take up a University training if he can afford to do so. I believe that it would be found in practice that apart from Dr. Burt's .01% that the practical approach up to the age of fourteen years would enable students to make more rapid progress. They would be able to approach the logical proofs with a background of knowledge that would

greatly facilitate their understanding, and, whereas, at the present time, memory plays the predominant part and understanding but a minor role, the positions would be reversed.

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1. COMMERCIAL SCHOOL LEAVING CERTIFICATE.
 2. THE RECRUITMENT OF TEACHERS.

Summary. The suggestion is put forward that there already exists an examination suitable as a Leaving Certificate for commercial students. This is conducted by the Royal Society of Arts. The standard of work demanded is very high and success in it is indicative of a sound general education much more reliable than success in the present academic examination.

The question of supply of teachers is discussed and it is suggested that a training course should be set up for well-qualified people who have spent several years in business. They could be trained as teachers and their associations in post-primary schools with academically-trained teachers would greatly assist in changing the outlook of the schools.

THE SCHOOL LEAVING EXAMINATION.

One of the objections to the existing secondary schools is that the whole life of the school is subordinated to the task of taking the School Leaving Certificate. This fact colours, if it does not determine, the whole of the work of the four or five years during which the pupils are at the school. On these grounds therefore, it might be argued that the best system of all would be to have no leaving examinations at all, thereby freeing the school to develop along its own lines, and not be subject to a curriculum imposed from outside. I have tried to show, however, during the discussion on the School Certificate that the main reason why all the time of the pupils is taken up in preparing for the examination is that the whole scheme is one of instruction and not of education - that mere knowledge is the basis of success, and that the amount of such - as I have suggested - unrelated knowledge is so great that it is necessary for the less able pupils to start cramming almost from the beginning of the course. If, on the other hand, our syllabus followed the natural desires and needs of the pupils, and if our examination were based, not merely, or mainly, on instruction or on the repetition of facts laboriously learned, but were of such a type as might be reasonably accepted by anyone

at any age - as in fact our examinations are based, to try to test the function of the education, then it may be that the examination will not prove such a curse and such a hindrance as it undoubtedly does in the existing secondary school. As I have mentioned in the English section, I believe that the ability to read a passage, or series of passages, and thereafter to write a connected precis, is, at the same time, one of the best exercises in thinking, and one of the best tests of a pupil's English. The main part of an English test, for example, might reasonably consist of the writing of a precis and of a letter on a subject well within the scope of a pupil of 15 or 16 years. The examiner should consider that the examinee is an ordinary boy or girl of 16 years of age, and not a young Lamb or a young Lucas. It would be impossible to cram for such an examination, and the quantity of the work done would, to a large extent, represent the functioning of the pupil's education. Questions on set books could very well be included, provided in the paper as a whole, a very high standard of English is exacted. The same conditions might easily be demanded in ^mathematics for the examination could be made to depend, not on the learning or forgetting of particular proofs, but on the ability to perform certain definite actions of a mathematical nature. After all, theory is but practice made conscious of itself, and, if there is no time in school up to 16

years of age to appreciate the theory, than that is not the fault of the educator, and he does not mend matters by forcing the theory prematurely. To a lesser degree, the same conditions might apply to the other subjects, for I am firmly convinced that we make a grave mistake in trying to estimate the worthwhileness of education by an examination of the mental content of a child of 16. We cannot, after all, have "educated" a child of 16; we can only prepare that child for education. The manner in which we prepare him and examine him will very largely determine whether his education does virtually stop at 16. "The Education of the Adolescent" considers the question of a leaving examination for students in post-primary schools. That committee, of course, always had in mind schools other than secondary schools. I have in mind here all pupils who are not going to the university. Many suggestions are there put forward but the basic suggestion I would urge is that the examinations must come out of the hands of the universities. In paragraph 171 of the same report, we learn that several witnesses advocate that students should be allowed to enter for the first School Certificate Examination provided it were clearly understood that this was only an exceptional arrangement. Obviously in the minds of these witnesses

the curriculum would have to be practically the same as that of the secondary school. If it is necessary to cram in the secondary school, where the selected students go, how much more so would it be necessary in a central school. Obviously in many minds there is no alternative to the traditional curriculum.

The main curse of examinations is, I believe, that we aim far too high, and have therefore to be content with a very low level of performance, whereas we should make the examinations much simpler in character, and, at the same time, demand a very high standard of performance. If that policy were adopted, I do not think there would be the same antipathy to examinations as undoubtedly exists today. I think too, that an examination based on the curriculum I have outlined would be much more trustworthy in giving employers some idea of the capabilities of a student holding a certificate.

The Hadow Report recommends the setting up of a large number of boards, presumably on the same lines as the boards for the Academic School Leaving Certificate:-

"We are of opinion that the organisation of an examination of this type could best be undertaken by a number of joint boards in different districts throughout England and Wales, consisting of representatives appointed by the local education authorities, both for higher and for elementary education, by the universities of districts, and by the teaching profession in its various grades."

There is not one word in this recommendation about invoking the assistance of representatives of commerce or trade. This is particularly significant in view of the complaints of the committee presided over by Sir Francis W. Goodenough. Apart from that, however, the most serious criticism has referred to the parochial nature of the Board's suggestion. Training for commerce for students up to 16 years of age should not differ materially in Newcastle from the training in Manchester, Birmingham, or London. Local specialisation before the age of 16 is impossible, though, to be sure, the larger principles might be best illustrated by reference to local industries. England is very small at the largest, and cannot be considered too vast an area to have one examination. The great need is, in fact, for one national examination, providing sufficient choice of subjects to meet the needs of all.

As a matter of fact the examination lies ready to hand. In recent years the Royal Society of Arts have introduced two examinations for commercial students: the Junior School Commercial Certificate, and the School Commercial Certificate. "A Royal Society of Arts School Commercial Certificate (first or second class) is awarded to candidates who pass in one examination in Arithmetic Book-keeping, Economic Geography, English History, and at

least two of the following elective subjects: French, German, Italian, Spanish, Commerce, Shorthand, Typewriting, Mathematics, Natural Science. Not more than four elective subjects may be taken, and not more than two foreign languages." It is also possible for schools to submit different syllabuses in English, Economic Geography, History, and Natural Science. I attach a list of the Examinations Committee, and a perusal of the names therein and the organisations represented would show at a glance what an enormously powerful effect such a committee would have in shaping the type of education most suited to candidates entering commerce. Here we have an excellent balance and no one would suggest that the representatives of commerce were ever likely to be in any way concerned with the lowering of the quality of the work in examinations.

So far as the actual examinations themselves are concerned, all teachers who have anything to do with the training of students for them will bear witness that they represent a very high standard indeed. In those subjects where a direct comparison can be made my own experience has shown me that the R.S.A. examinations are certainly as severe a test as that set to Matriculation students.

The names of the examiners would guarantee a very high standard. Two notable examiners are Prof. Lyde for Economic Geography and Prof. J.G. Smith of Birmingham University for Commerce.

I am not suggesting for a moment that this School Commercial Certificate, as at present organized, is ideal, but I am sure that no unbiased person who will give the matter due consideration can fail to realize that for the vast majority of students in secondary and post-primary schools generally training for this certificate would give them a course which would result in an education fundamentally sounder than is at present obtained from the traditional curriculum. With the prestige of such a body as the R.S.A., with the prestige of such a committee as I have indicated I am confident that the adoption of this certificate as a standard would be an important step forward in the history of Education in this country.

EXAMINATIONS COMMITTEE.

The Committee as appointed in 1932 is as follows :—

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Sir GEORGE SUTTON, Bt.
(Chairman of the Committee).
P. M. EVANS, C.B.E., M.A., LL.D.
SIR FRANCIS W. GOODENOUGH, C.B.E.
Colonel Sir HENRY McMAHON, G.C.M.G., G.C.V.O., K.C.I.E., C.S.I.

APPOINTED BY CENTRAL EDUCATION AUTHORITIES.

England and Wales (Board of Education) ... W. ELLIOTT, M.A., H.M.I.
Northern Ireland (Ministry of Education) ... W. A. HOUSTON, M.A., Assistant Secretary.

APPOINTED BY LOCAL EDUCATION AUTHORITIES.

London County Council Education Committee		{ Dr. F. H. SPENCER, Chief Inspector. J. R. TILL, B.Sc., Inspector for Commercial Education.
Birmingham Education Committee	...	W. HENDERSON PRINGLE, M.A., LL.B., Principal of the City of Birmingham Commercial College.
Bradford	" "	... THOMAS BOYCE, M.A., B.Sc., Director of Education.
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Halifax	" "	... A. R. BOEREE, M.A., B.Sc., Principal of the Municipal Technical College.
Kent	" "	... E. SALTER DAVIES, C.B.E., M.A., Director of Education.
Liverpool	" "	... JOHN A. TODD, M.A., B.L., Principal of the City School of Commerce.
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West Ham	" "	... Dr. T. C. BAILLIE, M.A., Principal of the Municipal College.

Association of Education Committees	...	A. W. HOYLE, B.Sc., Director of Edu- cation, Bath.
Association of Directors and Secretaries for Education		P. E. MEADON, C.B.E., M.A., Director of Education, Lancashire Education Com- mittee.

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Society of Incorporated Accountants and Auditors WALTER HOLMAN, F.S.A.A.

Chartered Institute of Secretaries ... P. LLOYD TANNER.

CO-OPTED MEMBERS.

R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D.
C. W. TRUELOVE, B.Sc., F.C.S.

The Examinations of the Royal Society of Arts.

EXAMINATIONS FOR EVENING AND OTHER PART-TIME SCHOOLS.

The Examination system of the Royal Society of Arts was an outcome of the Great Exhibition of 1851, which, as is well known, was originated by the Society. In that year a scheme for the formation of a union of Mechanics' Institutions was submitted to the Council, the object of which was to enable the scattered Institutions to co-operate, and thereby develop the educational facilities which they provided. Among the suggestions for the utilisation and development of these Institutions was a proposal for a general system of examinations among their members, and in the Spring of 1854 a scheme was published. In 1856 62 candidates attended an examination at the Society's House. In the following year the first attempt at provincial examinations was made. The numbers increased steadily till 1895, when there were just over 5,000 candidates, and in 1900 the number had increased to 10,000.

In 1901 considerable modifications were made in the examinations. In place of the general examinations of one grade only, a new system of three Stages (Advanced, Intermediate and Elementary) was introduced, though papers were not set in the Advanced Stage until 1905. A further change was made in 1915, when it was decided to hold two series of examinations, one just before Easter and the second before Whitsun. A third series held in July was added in 1926.

The new system resulted in a large increase in the papers worked by candidates, from 19,813 in 1904, to 23,804 in 1905. This total gradually grew to 30,872 in 1910, and 35,422 in 1914. Owing to the war there was naturally a reduction in the entries, but in 1920 the effects of the war, as far as the examinations were concerned, had disappeared, and 49,390 papers were worked, being 13,968 more than in 1914, the previous highest year. In 1933, 81,436 papers were worked. Since 1901, over 1,000,000 candidates have been examined.

EXAMINATIONS FOR FULL-TIME SCHOOLS.

Examinations of two grades in a full course of subjects suitable for Day Schools are held annually. The School Commercial Certificate Examination is held in July, and the Junior School Commercial Certificate Examination in March and July. Particulars and syllabuses of these Examinations are issued in a separate pamphlet.

The Recruitment of Teachers. In dealing with this subject

it must be remembered that the students I have in mind are those who normally leave school at sixteen or seventeen years of age. What I have been trying to suggest is that these students should have a general education with their minds directed to Commerce. In the subjects I have listed there is nothing at all which is not well within the capabilities of the professional teacher but what is wanted in the professional teacher is a changed attitude of mind to business. All along the line the training is for the university - there is apparently no other possible future life for their students. Of recent years, for example, the Civil Service examinations have been modified to fit in with the requirements usually associated with the School Leaving Certificate. The age limits for one large group of both boys and girls are 16 to 17 and yet it is the exception for any school - at any rate in the North-East - to make the slightest effort to help capable students to take these examinations. I meet cases every year of boys and girls who have distinguished themselves in the school examinations but have not known until too late of the existence of such an examination. Now if that is the attitude of the teachers to an examination closely akin to the work they are actually doing in the school it is obvious that a great change of heart is necessary to get these teachers to take that intelligent interest in Commerce that is a pre-requisite for success in training students whose

livelihood is to be gained in the world of Commerce.

The introduction of Degrees in Commerce since the war at many English and Scottish universities has provided an excellent source of supply of teachers with the minds suited to the work that is necessary in post-primary schools. The unfortunate state of affairs at the present time, however, is that in many cases these teachers are wanted for teaching Shorthand, Typewriting and Bookkeeping while, with the exception of the last-named subject, no instruction is to be had in these subjects at the university. This is a state of affairs in direct contrast to that obtaining in America where these subjects have achieved a status almost equal to that of many of the traditional subjects. Even in Bookkeeping the training gained at a university provides the background only and it requires some experience before the teacher is able to present the subject in a manner suitable to young people. In this country these subjects have been taught by non-professional teachers very often of very doubtful quality. I have tried to show that the most successful teachers of these subjects must be persons of very broad general culture. Yet it has been put to me very seriously that it is not sound policy for any teacher to show exceptional skill in or enthusiasm for Shorthand or Typewriting. Such skill or enthusiasm, it is suggested, would indicate that the particular teacher was of a lower order and, thus deficient in that organizing power so necessary in a head.

It does seem an amazing thing that to develop excellence in the subject you are teaching should be a disqualification yet the matter has been put to me so frequently and so seriously that there must be some basis for the belief. I have taught a relatively large number of teachers and the consensus of opinion seems to be that it is much more important, for instance, to have a qualification in Advanced Accounting than in Shorthand even though the teacher were mainly teaching the latter and despite the fact that Advanced Accounting has but the faintest connection with the work being done in the school in this subject. This humbug arises very largely out of the ignorance of those who select teachers. Many of the qualifications which are accepted and even sought are professional qualifications that have little or no real relation to the work that is needed in post-primary schools. This is not to suggest for a moment that there is not a large body of very estimable people in business who would make excellent teachers for commercial post-primary schools.

It is possible, I believe, for persons who have been in business to count for salary purposes up to seven years, experience gained therein. I believe there is a very large body of well qualified people who would be willing to take, say, a six months' course in the Principles and Practice of Teaching. I believe it would be an ex-

cellent plan if such a course were instituted and made an integral part of the whole system of training teachers. It would mean that there would be coming in regularly into post-primary schools a certain number of teachers with business experience and while frankly I would not be so much concerned with their actual business experience the important point would be that they would bring into the schools a different attitude of mind and their association with the other teachers would tend to correct that monastic outlook that is much too common.

There is at present a disposition to catch all teachers young and to put them to work as soon as they have completed their university work. There is too - perhaps only temporarily - a disposition to favour a teacher who will start on the lowest rung of the salary scale but if it is considered that business experience is a valuable qualification then local authorities ought to be glad to appoint teachers who, though they may have no actual teaching experience, have experience of life outside school and after all school is supposed to be a training for life and these particular teachers are therefore all the better qualified for the real work of the schools.

The association of academically trained teachers with others trained partly in business would, I believe, lead to a changed outlook on the part of the school.

The existing professional teachers have, to a large extent, the information necessary to take care of most of the subjects in the curriculum I have outlined. If, in each post-primary school a certain proportion of trained teachers with business experience were added then the scheme of things I have suggested would have an excellent chance of success and would result in a system of education that would produce boys and girls of high principles, imbued with the idea of service, boys and girls who would enter business conscious - in part at least- of what it was all about and with an idea of the possible part they could play in it. They would be eager to set out on the great adventure for after all there is no fun like business.