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CHILD AND MAN

AN ANNUAL MAGAZINE
OF CURRENT EDUCATION IN
RUDOLF STEINER SCHOOLS

1959

THEME :

EDUCATION AND THE WHOLENESS OF LIFE

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*Responsibility for the opinions expressed in all articles
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EDITORIAL

THE first number of the new annual, *Child and Man*, is devoted to illustrating by characteristic examples the dimension within which a Rudolf Steiner School works, a dimension which can only be properly described by the word 'wholeness'. Man is born free and everywhere he is in chains—such was the cry raised against the tyranny of the *ancien regime*. To-day there is a new tyranny falling for a new cry: Man is born whole and everywhere he is in parts.

The most obvious manifestations of this apartheid in education are the segregation of children into different schools at the age when Alfred the Great was just learning to read, and a specialisation which conditions children's outlook on life so early and so radically. Both of these, however, are the external symptoms of far deeper causes: the first of our loss of a complete picture of humanity, so that we are at loggerheads as to what a man is and what he is supposed to be doing on the earth: the second of the isolation of modern departments of knowledge from each other, an isolation which is calling desperately not for a synthesis of all existing knowledge, but for overriding conceptions, or new ways of thinking, which will give meaning and significance to the immense discoveries made, and being made, by specialists in every field of research.

It may be said that the education practised in what are called indifferently Rudolf Steiner Schools or Waldorf Schools* is dedicated to the overcoming of segregation and specialisation; but its exponents are well aware that this cannot be done with the prevailing conceptions of the nature of the child and the function of the school. Happily these conceptions are changing and much of what Steiner advanced a generation ago, which was then considered revolutionary doctrine, is now slowly coming into favour. But educators still argue over such a question as the division at eleven plus as though this was a matter to be considered on its own merits, without reference to the quality, form and aim of the education to be given.

There are two main objects of education. The first is to introduce the child to the world—and this includes developing all those powers of thought, feeling and will through which the world is experienced. The second is to

* The first school founded on Steiner's work was the Free Waldorf School in Stuttgart.

prepare him for such special occupation as his skill and aptitude seem to indicate, in so far as this can be determined and should be prepared for in childhood. It is to be noted that more children have all round ability than is generally recognised. The dislike of, or failure in, certain subjects is often to be attributed not to inherent incapacity, but to some external suggestion or influence, such as bad introduction to the subject, or an introduction at too young an age, or the influence of family tradition, or of some person of importance in the child's life.

The accent of a Waldorf School is on the introduction of children to the world, both for its own sake and as ultimately the best means of attaining the second object, the special preparation for life. For this reason such a school is only interested in knowledge when it becomes also experience. One of its aims therefore is to maintain and foster those childlike qualities of activity and imagination through which young children enter so deeply into what they learn and what they do. In recent articles in *The Times*, Lord Radcliffe diagnosed the malaise of the younger generation as lying in the fact that they know everything and experience nothing. They have only to turn a knob, and information, skilfully condensed and simplified, is presented to them both orally and pictorially on every subject under the sun. It is all over in twenty minutes, and something else quite unrelated takes its place.

One of the objects of a Waldorf School is to give the necessary time and concentration to each subject so that it is really *experienced*. When experience is the aim, the considerations on which the division of children is commonly based lose their validity. It takes all types to build up a total experience, and a less intellectual child has often deeper perceptions than are given to the quicker mind of his clever brother. The division at eleven plus is particularly unhappy because the twelfth and thirteenth years are in reality the crown of an earlier epoch rather than the beginning of a new, and present an unparalleled opportunity for transforming and consolidating the experience which the children have already gained.

The obvious objection to the common schooling for life which is the practice of Waldorf Schools is that it forces all children to go at the same pace and takes no account of individual abilities and aptitudes. This is not true, if the teaching be skilful, even within the common lesson. But the form of a Waldorf School and its organisation of the day, as is explained in the first article, gives peculiar opportunities for combining a measure of specialisation with common educational experience in a social group. Much time is wasted

in education in teaching children with difficulty at x years old what they learn with ease at x plus 1, or x plus 2. By teaching many things somewhat later than other schools a Rudolf Steiner education saves much time for other things, and yet can bring the children to the same standard as generally obtains in the best schools.

When all is said, however, every new age calls for the sacrifice of something which was good in the old, and it is to be doubted if the kind of scholarship which was the glory of the old Public School Sixth Form can or should be maintained in the modern scientific age. The Romans abandoned something of the ideal union of gymnastics, music and intelligence which had belonged to the Greeks, but they added the study of a foreign language of which the Greeks knew nothing. The Seven Liberal Arts of the Middle Ages formed a study less in touch with life than the Roman education with its strong emphasis on practical rhetoric, but it was a universal education combining the sciences (as then understood) with the Arts. The Renaissance abandoned the universality of the Middle Ages, and brought in a high degree of scholarship in a severely limited field, and generally for a severely limited class. The advent of the sciences, and of universal education, shattered this exclusive ideal. We are now being asked to base our children's education on divisions never previously made, and on a degree of specialisation never before dreamed of: and this at a time when there is need, as never before, for every man and woman to have a wise and balanced appreciation of all aspects of life and an understanding of his fellow men.

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The reader will notice that this annual contains no article specifically on the subject of Art. This is partly because the subject calls for a complete number but partly also because the object of this number is to stress the way in which a Waldorf School introduces artistic methods and artistic perception into all the subjects which it teaches. In a recent article in *The Sunday Times*, Professor Jefferys of Birmingham University has called attention to the losing battle which is being fought by the Arts Faculties in our universities. He advocates a more liberal treatment of the sciences, and this is all to the good. But it will ultimately be the entry of imagination and art into the very field of Science which will restore the unity of man which now lies broken and in pieces. It was to this re-union of Art, Science and Religion that Rudolf Steiner dedicated his life, and to which the schools founded on his methods endeavour to make their contribution.

TWO VIEWS OF COMPREHENSIVE SCHOOLING

I.

by

H. L. HETHERINGTON, B.A.

MANY doubts have been expressed in recent years concerning two practices in education in this country: early specialisation, and the resultant segregation of children into different kinds of schools, of different social standing. And yet, incontestable as these objections are in theory, no adequate organisation has yet been devised to meet them. The objection to over-early specialisation is based on cultural grounds, that to the segregation of children has been made a political issue. Both, however, stem from something deeper than either, something which goes far beyond educational practice. Because this wider issue has not been fully understood, the attempts to meet the objections to our present system of schooling are inadequate and superficial.

The dangers inherent in an over-specialised education and in the segregation of children into widely differing types of schools are too well known to need enumeration here. But when one enquires how these dangers are to be avoided, the answers do not satisfy common sense. To insist merely that the fifth and sixth-former must take a wider range of subjects in the classroom, although he may be examined only in those which later will be of use to his career is inviting the pupil to divide them in his mind into the 'fancy' ones, which he is to take, because the headmaster says so, and the 'bread and butter' ones, which he will need for his future career. To insist that children of varying types and ability must be educated under the one roof of a gigantic comprehensive school is to try to meet by mere outer organisation what must surely be tackled far more radically in the classroom itself.

The two problems under consideration have risen from a common source. Our education has disintegrated into a series of 'subjects', because our twentieth century knowledge has done the same thing. This atomising process began at the Renaissance, but seriously affected education only at the end of the nineteenth century. It did so once the old classical education gave way to science and the study of modern languages. The atomised nature of education has led also to the demand for specialised schools and to the segregation of children into them.

Thus education in the face of the social and technological demands of our day threatens to become mere instruction and we are on the road to the social anti-heap forecast by Huxley, Orwell and others. It is sometimes salutary, when faced with seemingly insoluble and complex problems to ask some simple, even childish, questions. Let us try.

1. Do we mean more by education than the mere imparting of skills?
2. If the answer to the first question is in the affirmative, what is this extra something?
3. Does this something differ in the way it is presented according to differing types of children?
4. Can it ever be disregarded, so long as young people are at a place of learning?

It is obvious that the central question is the second one. On the way it is answered depends our policy with regard to both specialisation and segregation. Because it is very rarely answered satisfactorily, our powerlessness in face of these two problems persists, and we only scratch at the surface and make proposals which do not begin to affect the root of the matter.

The acquiring of a skill, whether it be accountancy, carpentry, chemical analysis or dairy-farming, has in itself educative value. The skilled craftsman is often a better man for being so. The discipline involved in learning a craft is often carried over into life in general with good results. But in an age which demands a degree of *self-consciousness*, the acquiring of a skill is not enough. The educator is required to do more. At the moment children are leaving school at 15—this "more" must in some measure be achieved by then. Those who stay later have the opportunity of consolidating this achievement, and developing it in a more adult way. The university student can take the matter further still.

A citizen in our self-conscious age must have considered the following in his youth:

1. *The development of man and his evolving consciousness.* This study includes history, literature, aesthetics, philosophy, mythology and religion.
2. *The stage of man's activity: the earth in its totality.* This includes geography, geology, meteorology and astronomy.
3. *The understanding of nature.* Under this heading fall the sciences and mathematics.

Every teacher will know that these three broad fields will have to be presented in totally different ways according to the age of the child. The curriculum of a Rudolf Steiner school takes this fully into account, but by the time children begin to leave school (from 15+ onwards), some kind of completed presentation has been given. It is not the purpose of this article to go into exhaustive detail in outlining the way in which the Rudolf Steiner education provides a truly "comprehensive schooling", but rather to state the need for it and to indicate how in general it is tackled in the framework of the curriculum.

A young person leaving school should surely have a general "sense" of his past: without it he is like a man who has lost his memory, depending pitifully on others to inform him of his origin and the way in which he has become as he is. Without it he is an easy prey to the politician who would present a falsified history to him, concealing his true past from him. A young person leaving school should also have an overall grasp of the structure and sublimity of the planet on which he lives. Just as history and the allied studies give him a view back over the centuries and into the depths of the human soul, so geography takes him on to a lofty hillside and shows him the far spaces of heaven and earth in all their grandeur. A young person leaving school must also have considered the enigmas and marvels of the animal, plant and mineral worlds and the laws of mathematics which underly most of what he will find there.

By starting with the whole view, one can more easily see how 'subjects', which before tended to become isolated, belong together naturally in three great groups. The teacher must never lose sight of the whole field, or the ultimate aim; what he has to give is for *all*. There can be no specialisation, without depriving some children of some part of the whole picture, there can be no segregation, since the presentation of these broad and fundamental themes speaks to all children alike, in the form in which they are given up to the fifteenth year. After that some children may leave to take up different kinds of apprenticeship, but those who stay, stay together, to experience together a further, and more adult, elaboration of what they had learnt in former years.

The timetable at a Rudolf Steiner school is framed to fit this conception of a broad basis of general knowledge for all children. The first two hours of every day is devoted to the "main lesson". In this main lesson the class teacher during the first eight years (6+ to 14+) and each specialist teacher

for the rest of the school course (14+ to 18+) are concerned precisely with presenting the theme: "Man, Nature and the Earth". This theme, in its totality he never loses sight of; he may well, and often does, link up one "subject" with another, natural history may lead into botany or geology or local history, English literature will certainly evoke historical and probably geographical studies, later on a study of the Renaissance will naturally include something of the history of science, the history of art, the reading of works in more than one language, as well as the more conventional historical approach.

The main lesson system provides the organisational basis for a unified presentation of what all children must meet before they leave school. Later on in the upper school, when examinations have to be taken, the work for these is done after the main lesson time* and the fundamental ground studies of the main lesson are left untouched.

A question will naturally arise in the mind of the reader who is unacquainted with this approach. How about the teachers? If there is to be a flowing together of what is usually regarded as a set of separate subjects, each taught throughout the school by a group of specialists organised together under a senior teacher, who teaches these subjects? During the first eight years the children have the same class teacher, who is responsible for *all* the main lessons over that time. Difficulties with regard to subject-matter, especially in the later years, are met by consultation with specialist teachers in the upper school. In certain cases, the specialist teacher may himself take the lesson, but in general this is avoided. In the upper school specialists gradually master a group of subjects. Literature, history and aesthetics are often taken by the same teacher, as are physics and mathematics, or biology, zoology and chemistry, or geography, geology and meteorology.

Constant consultation between teachers is an absolute necessity and a regular weekly meeting to discuss subject matter and the technique of presentation is held during term. The teaching staff is formed into a "college", not only to administer the school, but also as a kind of minor university, in which all learn and study together. This enlivens and deepens the teaching itself.

In view of this arrangement we have just outlined, any thought of specialisation or segregation becomes patently absurd and repugnant. There is a common experience, a common treasure-house of knowledge and understanding to which *all* children are the rightful heirs, and which they should

* This is the arrangement in the fully established English Rudolf Steiner schools. Smaller schools have temporarily to modify this.

receive together. Some children may have to leave at 15 or 16, but those who are fitted and able to continue to 18 should at least for part of the day, in the "main lesson", receive the great cultural subjects together.

In this way two great objects are achieved, young people, receiving something in common, whatever their social background and their future, learn to realise what is common to *all* men; they also know that whatever their special training later, there is a common field of knowledge and experience that no-one can afford to neglect, if he is to develop his peculiar skill rightly in later years. This is true "comprehensive schooling" and seeks to weld together into a living, fruitful unity what threatens to become disunited and mutually exclusive sets of single interests. Out of such a schooling the true picture of man as the centre of evolution can emerge and work dynamically in all social life.

II.

by

R. LISSAU, M.A., PH.D.

THE general public does, on the whole, not often discuss educational questions, but there are two problems which are at the moment rather widely discussed, the question of selection for secondary schools, the "eleven-plus", and the related question of whether such selection is necessary at all or whether there should be comprehensive schools. This is a most important question, but rather bogged down at the moment. Since we live in a democratic society and since we have compulsory education the question of what kind of education to give to our children is legitimately a matter of general concern. It is, however, unfortunate that there is only one authoritative national body, parliament, in which decisions concerning education can be made—unfortunate, because these decisions will often be guided by party considerations and thus a dispassionate discussion of educational problems becomes difficult.

The question of the value of comprehensive schools is in itself difficult enough. For it seems that we shall decide for or against the comprehensive school according to our views on the function of education, which in turn will depend on our views on man, and his relation to God and the world. Here we shall look at this problem on the basis of the experience gained by the Rudolf Steiner's schools* which, since the *Waldorfschule* in Stuttgart was founded in 1919 have, in fact, been comprehensive schools. Indeed, at the time of the foundation of this first school Steiner often used to call it proudly an *Einheitsschule*, the German term corresponding to comprehensive school. He did this not because of any egalitarian tendencies, but because he was interested in the wholeness of man, in the shaping of the character of a child, the widening of his appreciation and the quickening of his will as much as in the training of his intellect. There is one feature right in the centre of Rudolf Steiner's teaching and of the practice of the various Rudolf Steiner schools which, for the purpose of this article, might be called insistence on man's creative ability which, it seems, no comprehensive school can afford to overlook, and thus our discussion will return to it again and again.

Historically speaking, the specialised school is the modern, revolutionary idea, the comprehensive school hallowed by tradition. The public school was

* The experiences of Quaker schools, for example, might equally be helpful.

a comprehensive school—for the sons of gentlemen, though, but for *all* their sons capable of being educated. Even one developing so late as Sir Winston Churchill—who to-day would fail the eleven-plus as well as the common entrance—found a place at Harrow. And once in, he would not receive a form of education basically different from that of his more brilliant, and incidentally more ephemeral contemporaries. If he was no good at Latin, if he was even no good at games, there was still room for a boy who liked fencing and wrote a good English essay. If the public school was comprehensive and not specialised, so certainly were the medieval and Greek schools. They dealt with every boy who came to them, and did not devise special forms for special types.

Why then do we? It seems there are three reasons for our present practice of early specialisation. Firstly, because in spite of all protestations to the contrary, when we speak of education we think mainly of intellectual education. The intellect, however, isolates, defines, specifies, whereas the will in its conscious and subconscious activity unites. Secondly we cannot rid ourselves of the Brave-New-World-complex. There are so many different jobs to be done, let us see that there are the men to do them. And let us start well in time to put each man in his proper groove, the one for which he is predestined by nature. The third factor, hardly ever talked about, is a sort of subconscious cultural arrogance which is rationalised into the belief that only children with a certain I.Q. are capable of appreciating a particular subject, when in reality the problem ought to be: This subject is thoroughly educative. How is it to be taught so that its essentials, at least, are appreciated by every child?

Early specialisation is harmful for the development of an integrated personality and socially undesirable. John Barron Mays, a former Hon. Warden of the Liverpool University Settlement, said in an article in *The Observer*:

Partly because of the impact of cheap mass amusement on the uncritical minds of the less talented members of the community, and partly because of a too successful selective process at the age of eleven-plus, whereby the sheep and the goat are separated once and for all, we are developing a new social class system. On the one hand there is the new aristocracy of intelligence, and on the other a sort of inverted caste system based on a contempt for education and a disregard for the things of the mind.

If in this age of specialisation and mechanisation we want to cultivate what is truly human we must actively foster man's creative ability, and—must do so during childhood and youth, the most formative and impressionable periods of a man's life.

We often read that Russia is overtaking us in the industrial and scientific fields, and are told that unless this country can “produce” by 1970 an annual “output” of so and so many science graduates the most dire consequences are likely to happen. If we followed the most extreme remedies suggested we should have to imitate Russian methods in order to resist the Russian challenge and make use of growing individuals as cogs in the organisation of our society. In other words, the Brave-New-World-attitude once more. Mays on the other hand continues the quotation above:

This is a most serious matter which deeply concerns social ethics, since it prevents cross-fertilisation between differing groups, while, on the material plane, it gravely affects the survival of a country which, like Britain, needs to foster the maximum skill and initiative in the face of a highly competitive world economy.

Thus, only if we can foster responsibility, initiative and imagination not only in a minority, but in every member of the community who is at all capable—and this can only be found out after many years of patient endeavour—can we hope to achieve “maximum skill and initiative”.

Early specialisation is based on the same naive and mechanical approach to life which, in a completely different sphere, wrought havoc on the land and devastated the soil. A plant takes so many chemical elements out of the soil, it was found, and so the conclusion was, let us put them back, so much nitrogen, so much magnesium, etc. Or better, put in even a bit more, so that the soil has reserves. The same lack of understanding of organic processes and changes characterises all too often our approach to education. What you put in, will come out. Put it in early, and it will come out well in time, put it in in quantity, and the result will be stupendous.

This view is not born out by facts, and one outstanding example might be quoted here: Jan Christiaan Smuts was unable to read and write at the age of 11, but took his entrance examination for Cambridge at the age of 19. He never suffered from having started on his formal education six years later than practically all our children to-day. On the contrary, the fact that at an early age he was not subject to an abstract training helped to preserve the faculties of intense concentration, observation, initiative and imagination, which are the

birthright of every healthy child and which so often disappear during, and possibly, because of the years spent at school.

The two main questions to which we ought to give a tentative answer are: What can be legitimately taught to *all* children? And: When ought we to start with specialisation in order to ensure the continuance and further development of pertinent parts of knowledge accumulated throughout history?

Let us return to our insistence on man's creative ability. What makes a man is not the amount of knowledge he carries with him. He can always look up facts in a reference book. It is what he makes of the knowledge and what it means to him. In other words: a moral, well-integrated, eager man will be an asset to society, one who can carry responsibility, show consideration for human values, is imaginative and creative, displays initiative and has an approach to and respect for knowledge. The development of these features should be the centre of education. Nor should this be too difficult, for, as said above, they are the birthright of every healthy child of pre-school age. Look at the concentration, the imagination and initiative which the child displays when playing. Think of his profound belief in the intrinsic wisdom and knowledge of the adult. As yet he is not socially considerate, but his reactions to human situations—particularly when they occur in a story and are of no practical concern to him—are warm-hearted and generous.

All our activities in school ought to build on these features of childhood and not stifle them by undue discipline or abstraction. Yet, whatever we do, we must not play, not trifle with things. On the contrary, the child ought to experience that whatever he does is worthy of utmost concentration and of a serious approach, he should feel how all his faculties are appealed to and engaged. All his faculties: his sense of wonder, his intellectual curiosity, his practical ability, his creative activity, his moral and religious being, his growing joy in comradeship. This a Rudolf Steiner school sets out to do and it can do it with children of very different intellectual abilities. Most children will be leaders and models in one sphere, followers, learners, imitators in another.

A Rudolf Steiner school can do this for three reasons. The teacher endeavours to teach out of the special character of the particular age of childhood he deals with. This means that the choice of subject, the approach to it and the emphasis is to be commensurate with the particular age and the particular group of children he teaches. To show here how this is done in practice would go too far and the reader is referred to A. C. Harwood's lucid treatment of this subject in *The Recovery of Man in Childhood*. The other two reasons

why a Rudolf Steiner school is able to give this form of education is the institution of the class teacher and of the main lesson.

The fact that the same teacher teaches all the most important subjects, and that he keeps his class for eight years, enables him to approach the children under his care much more intimately than if he saw them only for a few periods a week. He can relate the most varied subjects to each other, but more important can bend and shape them to the special needs of his particular class. He can build up certain tasks for his class which can go on for whole terms, for a year, for more than a year. He will strive to bring into practical, daily experience the moral impulses which the children were able to experience at first only imaginatively in story form. Plays will be enacted, the classroom decorated, care taken of a plot of ground, of some flower pots or of a delicate child. Tasks are mapped out which no single child could achieve, but which are made possible by the co-operation of all the children and thus they learn to work together with each other and experience that every child has a useful part to play, and are not forced constantly to compete with one another for marks and places. If the team spirit is worth fostering it ought to be fostered in the classroom—and not only on the playing field—and every child ought to be made a member of the "first eleven" and not to be content to rejoice in its vicarious glories.

All this can be achieved in a Rudolf Steiner school because the class teacher is a schoolmaster in the finest sense of the word. He has full responsibility for his class and will do with it what seems to him educationally best, provided he keeps 'the special character of the particular age of childhood he deals with', to which we referred above. Every day he has got his children for the first two hours of their time at school, and what form he gives to this 'main lesson' is his concern. There will be learning, certainly, but there will also be doing, and strong social and moral experiences. Other lessons will on a smaller scale work towards the same goal and through their varied activities widen the circle of the child's experience and activity.

Let us suppose the class teacher has succeeded in his eight-year-long task and the creative core of his pupils has not only not been allowed to be smothered, but has developed further and grown with the successive ages of the child. Let us further suppose that the class teacher has succeeded in arousing his children's interest in the manifold aspects of human life and the world around him, and that they have acquired the tools for further study: an ability to read, to express themselves orally and in writing, to master arithmetic and

the principles of algebra, and to know the forms of geometry. Then the time for *some form* of specialisation has come. Why this is so can be explained only by reference to a basic feature of Rudolf Steiner's psychology. He does not see in the child an adult, more or less untutored, but a being with a distinct character of his own, and one moreover which undergoes a number of profound changes. The last of those changes is puberty, and when the child has passed through it, he is now really an incipient adult, as yet not integrated, in bits and pieces, over-emotional and overstrained, but in many ways an adult already. At this age a more intellectual approach in teaching is most helpful to the crisis of adolescence, and teaching methods ought to take advantage of this fact.

However, once we bring a more intellectual approach to our lessons we begin to specialise and do not any longer appeal to all children alike. For intelligence can hardly be increased in a man. It can be utilised, activated and enlivened, made more powerful, humane or penetrating, but little can be added to its total volume.

Experience at Rudolf Steiner schools has shown that such an approach is practical, that boys and girls who went to a school which has no entrance examination or internal tests, but who acquired intellectual, moral and artistic imagination, love of work, respect of knowledge and appreciation of artistic values can enter our universities and colleges, even the more selective among them, and acquit themselves well in their chosen careers. Yet up to their final year at school—in some cases to their penultimate year—these young people worked for a good part of the day together with not only prospective students of entirely different subjects, but also boys and girls of no academic bent. There are many activities, intellectual, artistic, social and practical, including the daily *main lesson* which unite all the pupils of a particular age group.

To return to our beginning: Comprehensive schools are possible in our social and educational setting, and they need not be unwieldy organisations that deal with thousands of children. They demand, however, many more changes in teaching habits and practice than is usually realised. Whether they are desirable is for everybody to decide for himself. The experience of Rudolf Steiner schools might make such a decision easier.

A THEORY OF MAN
as
STARTING POINT FOR EDUCATING THE CHILD
by
ALAN HOWARD

DOES it make any difference to the educational result as a whole—everything else being equal—whether the teacher who stands before the child regards him as the fortuitous combination of material particles called genes or the like, or whether he thinks of him as the incarnation of a spiritual individuality, with the possibility of making a free and independent contribution to the evolution of man and the world?

This is a question to which anyone whose consideration of education extends only a little beyond methods and techniques must give frequent and serious thought. It is one to which Rudolf Steiner, whose practical contribution to just those methods and techniques has not yet been fully appreciated, gave a categorical and affirmative answer. He well knew, and indeed expected, that his methods, as methods, could be adopted here, there and everywhere; but he insisted that it would still make a profound difference whether the teacher who used them was familiar or not with the source from which they sprang. "A teacher", he said in his opening words to those teachers who were preparing to launch the first Waldorf School in Stuttgart in 1919, "who occupies himself with thoughts of the evolving human being will work very differently upon his pupils from a teacher who knows nothing of all these things, and never gives them a thought".

What then are "all these things", this theory of man in short which can penetrate so deeply into the educational process, and for which Steiner not only makes such far-reaching claims, but even asserts that it is no theory, but a body of fact available to anyone with the ability and will to make researches into those spheres from which it is drawn?

A simple observation, which anyone can make, may form the starting point of our enquiry.

We are accustomed to view the world in which we live as one composed of four basic kingdoms or spheres: the mineral world, and the vegetable, animal and human kingdoms. That there are phenomena taking place between the

borders of these regions, and even out beyond them, which cannot be so easily placed in one or the other, is not overlooked but need not concern us. The fact that there is a sufficiently large number of examples within each group, the characteristics of which constitute the distinctive nature of that group as a whole is what comes under consideration here. For all practical purposes anyone can tell the difference between a man and an animal, a plant and a stone, or on being shown a specimen of either is not likely to confuse one with the other.

In attempting, however, to review the characteristics of these four kingdoms we need to be more exact. A mineral is characterised for us by its lifelessness. If it shows anything bearing any likeness to activity it is because something is acting on it from outside. A plant, however, while in all quantitative aspects a mineral structure which can even be reduced to the mineral constituents of which it is composed, shows other effects which are not shared by the minerals as such. It grows, transforming itself almost entirely in growth; and it reproduces its kind. Again, an animal is also a mineral structure, and it also shows the same effects of growth and reproduction that are found in the plant—though transformed in a more complicated way—but it bears in addition an inner awareness which is not to be found in the plant. An animal obviously feels pain and pleasure, and makes movements which show that they are a result of what it is inwardly feeling. Finally, man himself is likewise a mineral structure, so much so that some scientists delight in reminding him that at best he is only so many grammes of this and so many of that. He also, however, displays the general though differentiated characteristics of growth and reproduction. He, too, is inwardly, feelingly aware of his environment, and shows this by responding accordingly. But he has something else. He can survey and ponder upon the substances and forces of which he is made, and the environment in which he finds himself, and as a result of his reflections make adjustments and alterations accordingly. He can think; and give evidence that he thinks in what he says, what he does *and* what he is. The fact, for instance, that such an article as this, irrespective of its value as such, can be written by one person and read by another is evidence of something exclusively human; and while it is not unknown for people to talk to animals, or even share confidences with flowers, the whole nature of the world would be thrown into complete confusion for us if either started arguing the point in return.

Now the fact that we are able to see, touch and taste the mineral world, and generally observe the changes which go on in it, often makes us overlook the fact that the forces which bring about these changes are not perceptible to our senses. We apprehend those forces only by thought. What we observe with our senses is only the *effect* of those thought-apprehended forces acting in observable matter. None the less we can and do confidently rely upon what is thus apprehended by thought, and nothing in the world could convince us that the force which acts upon a body is any less real—although it may be real in a different way—than the observed body upon which it acts. The forces by which I am maintained in my chair while I write, and which I do not perceive, are as real as the chair which I do. We should in fairness, then, be ready to extend the same reality to that other group of forces which brings about the effects of growth and reproduction which give to the vegetable kingdom its character as such, but which are nowhere to be found in the mineral world. If therefore in the mineral world we can speak with confidence of physical forces, we can with equal confidence speak of life-forces—names as such need not matter—in the vegetable world, and likewise soul-forces in the animal world and spirit- or mind-forces in the human world.

We can go even further.

Everything in the world has its own particular form or shape, which for practical purposes is usually called its body. We can speak of the physical body of crystal, plant, animal or man; meaning the grouping together of general mineral constituents of which it is composed into a particular, ordered shape or form. It may not, therefore, be an illegitimate extension of this word 'body' to adapt it also for the group of forces which give life to any particular plant, and that which gives awareness to any particular animal, and that giving reflection to any particular man. This would enable us then to speak not only of the physical body of the minerals, but the physical and life bodies of the plants, the physical, life and soul bodies of the animals, and the physical, life, soul and spirit bodies of man.

Now it must be emphasised here of course that we are dealing with thought-apprehended structures only—nowhere to be seen or touched; but if we concede to them the reality established above, then we can concede also that the thought which apprehends them as such here takes on the quality of perceiving, too. If we can rely upon our thought in making these distinctions in that which does not rise to sense-perception, and shape our lives in accordance with them just as we do with perceived objects, then it is because there is

something in our thought which bears the same relation to thought-structures as the eye does to colour and the ear to sound.

(This perceiving activity of thought is one of the fundamental concepts in Steiner's epistemology, which space forbids us to go into further here. Those interested, may pursue it as far as they will in such books of his as, *Truth and Science, A Theory of Knowledge According to Goethe's World Conception, or The Philosophy of Spiritual Activity*).

Now although we have drawn attention to four features of the human being which we think have as much right to be considered as distinct from each other as the four kingdoms of nature, we do not wish our readers to think of him as just an aggregate of these four. They interpenetrate one another forming a unity; and a human being is such a unity, just as we can speak of the world, the realm of nature, in the same sense as a unity. Just as two, three or four colours can be combined to give one impression of colour, so the four constituents of the human being form one whole—the particular human being we have before us. There are occasions, however, when this unity is disturbed. Death is an obvious case where nothing could be more exclusively mineral-physical than the corpse which the dying man has vacated. Sleep is another; and as long as the sleeper is undisturbed it is obvious to anyone who watches by a sleeping person that there is nothing but a living-physical phenomenon before him, from which all that gives it inner awareness of its environment and ability to reflect upon it and upon itself has temporarily adjourned. Steiner claimed that birth was yet another; and this brings us directly to where his theory of man becomes the actual basis for educational practice. But here it is necessary to be a little more precise with regard to terms.

We are accustomed to regard the beginning of a man's life as taking place at birth. More exactly it begins with conception. Throughout the embryonic period all that is potential in the adult man is already there and slowly shaping itself, but within the shelter of the mother's body. At birth it reaches a point where it can become independent of that body. Now Steiner avers—what might everywhere be conceded though not perhaps to the detailed degree to which he follows it—that this independence is only a partial one. The physical body is indeed independent, but the body of life forces which promote growth is not yet so in the same sense. It is certainly there, and busily active, but active in a state similar to that of the embryo within the womb. (Here it is necessary to enlarge the picture of the mother as a sheltering physical organism to one which would reveal her as a sheltering life-force

body, too, within our meaning of the term—in somewhat the same way as we think of a sphere of influence as extending beyond the limits of the physical centre from which it emanates). It is not until the 6—7th year, when the second teeth appear, that this 'body' too is independent. Similarly, the body of inner awareness and feeling follows a kind of embryonic development till approximately the 14th year when puberty is established, and only then becomes 'born' as an independent entity. And one must still continue to nurture the embryonic human spirit for yet another approximate seven years until—as is already accounted for in the traditional customs of the significance of the 21st birthday—the whole human being is there independently before us—an adult man.

It is impossible to dilate here on all that this conception of the growing human being implies for education, or even to indicate all those observable changes in childhood and youth which substantiate the view described above. Nor is it possible to describe how different is the method in dealing with one embryonic epoch from that of another, or how one is foreshadowed in its predecessor and how the method must keep pace with those subtle changes that appear as it approaches its climax. Suffice it to say that on this view education at once becomes a direct participation in the evolution of humanity in the widest sense, not only a preparation of the child for adult life in modern society. It must be consciously entered upon as such; and all its methods and techniques, its modus operandi, must be consciously shaped in line with evolutionary forces. Knowledge must certainly be imparted, instruction must certainly be given in the basic skills; but the teacher is not just an imparter of knowledge, or a skilled instructor of the three R's. The imparting of knowledge is the medium in which he works as a midwife to the birth of the human spirit.

But there is still something more.

We have described the constitution of the human being—any human being—in line with what Steiner had to say about him. In doing so we have done no more than indicate a *typical* human being; which nowhere exists as such in reality. There is something else in every human being which raises him above the type, and makes him *this* particular human being, giving to him that uniqueness which in lower orders of creation is only observable to a comparable degree in a whole species—the I, or Ego. This Ego is the essential human individuality which in its own unique way manifests in the spirit-filled, sentient, life-endowed, physical-mineral body of every human being. This it is which it must be the will of God shall come to birth in every created human

being, that it may in free recognition of its own nature carry further its own evolution, and the evolution of the world in which it finds itself and of which it is an integral part. This is literally the 'Son of Man' which must come to birth in every human being; and the task of education is just that: to assist in the coming to birth of the Son of Man in all human beings that are received into its care.

In a recent article in *The Sunday Times*, Sir Julian Huxley pointed out that one could no longer regard man as a higher animal. There was something in him which could not be found in any member of the animal creation, something unique which need not be the victim of evolutionary forces and environmental conditions, but which could take those in hand and shape its own destiny. This is completely in line with everything that has been stated above, except that Sir Julian did not give a name to this something. Steiner, however, did not draw back from naming what he also pointed to as this essential factor of human nature, and described this as nothing less than the power of the Christ in man working its way upward as a fact of evolutionary experience.

At this level we have reached out beyond the confines of the natural world, and penetrated a realm which is usually regarded as the preserve of religion. We have tried to indicate man's connection with the world as a mineral-physical structure, as living organism, as sentient being and as reflective thinker. We must now ask where he joins on to that same world in that unique capacity he exhibits in his independent creative will. And this can only be found in that which while human is at the same time super-human; in that which is at one and the same time man and what is more than man—divine. The divine man, the divine in man, has for countless ages acted as the inspiration of human history; and for nearly two thousand years now by means of ritual, worship and cult attempts have been made to realise that what has been the inspiration of human history has since become historical fact; that with the coming of Christ we have the impregnation of evolution with a seed of super-human possibility accessible to all men. This which has lain so long in the mystery of cult and the dogma of creed must now be investigated as a super-sensible fact of human development, no less real and no less accessible to scientific thought than any other fact of man and the world. It was Rudolf Steiner who had the courage to crown his theory of man with the fact of the coming of Christ, thereby throwing a bridge between faith and knowledge, and giving a new impetus to both. Independent of all documents and traditions on which so many still so feebly lean, this too he declared was a fact accessible

to human investigation. We shall only rightly understand evolution when it is investigated in terms of the "Not I, but the Christ in me"; and we shall only rightly educate when we align education down to its most meticulous pedagogical details with a cosmic process which has as its aim the emergence of the free creative spirit, the Christ in every man.

But let us now try and draw the threads together.

Education works itself out in a process of teaching children to read and write and calculate, and to know something of the world into which they have come. While this is going on the child is slowly progressing through succeeding and varying embryonic stages to the emergence, the birth, of its individuality. Everything which meets it in its environment has a conditioning effect upon what is thus coming to birth, limiting or assisting its subsequent activity, just as whatever happens to a woman while she is carrying her child in her body has an impact on the child to whom she subsequently gives birth. We cannot ultimately harm that individuality; nor can we for that matter improve on it; but we can make it easier or more difficult for it to come to self-recognition and effectiveness, just as we can impede or liberate the movement of a child's body by the kind of clothes we make it wear. In the environment of the child, acting upon it in all sorts of subtle ways, is not only the person of the teacher with his words and gestures and skill, but there is also the motivating conception of the world and man—or lack of it, which indeed amounts to the same thing—which is active in him. It makes no difference that it is not conscious in him at the moment, let us say, when he is explaining the Rule of Three, or while he elucidates the dependence of a verb upon its subject, just as it makes no difference that the breakfast which he had an hour before is unconsciously digesting itself within him all the while. Indeed, it is better so. But just as without that breakfast, or with an indifferent breakfast his exposition of the Rule of Three suffers, so what he thinks about man and the world when he thinks of it at all, what he carries within him as his theory of man works down into the subtleties of the way he teaches and acts in a liberating or restrictive way on the total embryonic development of the child.

That Rudolf Steiner evolved such a theory, and that he was able to show fact by fact how it works positively and healthfully towards the end we have indicated is the conviction of those who work along the lines of his teaching. It is easy, superficially, to pooh-pooh such ideas; it is equally easy to become so overwhelmed by what they involve as to reduce oneself to neurotic ineffectiveness, for there is much in the details of what Rudolf Steiner has to say that

will have to be postponed until a race of men appear who have developed those qualities by which such things are apprehended. But the fundamental logic with which he describes the basic outlines of his theory is something accessible to all whose most marked characteristics are neither superficiality nor timidity. He has marked out a path which all might tread with confidence, for at no step is it incumbent on any one to deliver over his faculty of judgment to the authority of another. All along the way he points to facts which are apparent to all. To ignore such facts is to make oneself blind on purpose to some of the most significant realities; to underestimate them is to leave for ever inexplicable some of the most immediate problems of our social life, and to postpone indefinitely their solution.

TEACHING SCIENCE HUMANELY

by

HANS GEBERT, B.SC.

A GREAT deal is being written and spoken about the gap between scientists and humanists and many schemes are being worked out designed to bridge it, at both school and university level. Most of the innovators seem to pin their faith on the introduction of additional subjects into the curriculum of the sixth forms or the syllabuses of the universities. Such suggestions lead not only to the vexed question where time is to be found in already overcrowded timetables for these additional subjects, but it is also doubtful whether the problem can really be solved in this way. If these subjects are still to be taught by specialists as more or less closed subjects there is the great danger that the gap will merely be transferred from society to the individual. This danger is indeed realised by many people. The demand, then, is for a more humane teaching of science and for a consciousness of the impact of scientific thought on the culture of our day when the humanities are being taught. Attempts to do just this have been made in Rudolf Steiner schools for the last thirty-five years. What follows is based on the experience of one science teacher in such a school, who has been privileged to share in these experiments for twelve years, after teaching for some time in a state grammar school. I rather think that success in the attempt to teach science humanely will also go a long way to solve the ever present problem of the supply of scientists and technicians.

The question of time is, of course, also an important one in a Rudolf Steiner school. In fact I am convinced that nothing really satisfactory can be done in humanising science teaching without severely pruning the traditional syllabus. In doing so it is most important to keep constantly in mind that one is trying to select those parts of a subject which it is important for every educated person to know, or which will convey experiences or develop faculties which it is desirable for such people to have. The danger is always that the specialists consider, instead, what they regard as important from the point of view of their science, and the result is a school syllabus which is really the beginning of specialised training in different sciences. Most ordinary level syllabuses of the G.C.E. are rightly criticised on just this count. Even many curricula for general science cannot be excepted: they also stop at far too elementary a level.

A great deal of the research techniques and of the problem-solving which these syllabuses contain is not necessary for a general education. The children must, of course, learn about the methods employed by scientists, and they should also carry out experiments themselves. They should have experienced what it feels like to be faced with a scientific problem and what it means to make an accurate experiment. These aims can, however, be achieved much more economically than is done usually. At present the pupils are required to learn experimental methods in every part of their work. A great deal could be gained by a judicious selection of a few typical experiments or, even better, small research projects if the facilities permit this. It would then be possible to deal with these much more thoroughly and the children would gain a much deeper experience from them.

Problems are, of course, largely introduced because they are supposed to test whether the pupil really understands the subject. Now it is certainly true in general, although not invariably, that a candidate who can solve a problem has also understood the subject. It does not follow, however, that a pupil who cannot solve a problem has *not* understood the subject. Faculties, especially that of translating a concrete situation into mathematical symbolism, are required for solving problems which have nothing to do with an understanding of the concrete situation. Problem-solving is, of course, a good training for the intellect and as such must not be entirely neglected. It is, however, practised in the mathematics lessons, and facility in it develops slowly in many children. There is no reason why difficulties in problem-solving should impede the teaching of science as a cultural subject.

What should then be done with the time saved by putting less stress on problem-solving and on learning many different research techniques? A good deal of it should be devoted to teaching the history of science. Most teachers seem now to agree that this is a most important part of the science syllabus but it is doubtful whether under present conditions many can do more than make short historical references here and there. It is not a question of introducing a connected course in the history of science. This is mainly because the subject has two different aspects which are suitable for different ages of children.

There are first of all the practical applications of science in technology, medicine and hygiene. These have affected our whole mode of living. This is very obvious to us adults and we often forget that it is not equally plain to the children. After all, many of the younger ones can hardly remember a time without a T.V. set. I have found that children from about 12+ to 14+ are

particularly interested in the way in which the modern inventions have developed and in how they work. They are also interested to learn how this development has affected the routine of daily life. They seem to ask "how" and not yet "why". In answering this question a great deal of useful scientific knowledge can be imparted. If one takes, for example, the development of the heat engine from Newcomen to jet propulsion, one sees how every new advance was linked to quite fundamental scientific discoveries. The course can be planned so that the most important laws and experiments are selected as a hard core which is really treated in detail, while the whole historical development has to be known more in outline. Such a course can give the children the feeling that science is everybody's concern.

Only at a later age, at the earliest from sixteen onwards, are the children (in my experience) really able to appreciate the second aspect, namely science as a chapter in the development of human thought. All the same it is essential that as many of our pupils as possible are brought to such an experience. Such a course has to be rather comprehensive if it is to be really effective. One cannot appreciate the novelty of modern scientific thought unless one knows what has preceded it. It is therefore necessary to deal fairly fully with Aristotelean ideas both in their original form and in their medieval modifications.

Both in Greek and in Medieval cosmology all sciences are really included. After this they diverge, and the story of the divergence can be linked with the teaching of scientific facts in many different ways. Only one scheme, which I have used with some success, can be given as an example. First it was shown how chemistry and astronomy gradually separated and became sciences on their own, without the obvious connection which they still had in Alchemy. Chemistry was developed up to the Atomic theory and the periodic table, and astronomy up to Newton. Such a treatment shows how the awakening interest in numerical relationships leads to quite a new view of the world. One can see how fresh vistas open up, but also how the essential unity of the universe disappears. The story was continued in lessons on electricity, and was taken up to the end of the 19th century and the dissolution of the simple concept of the atom. Much use could be made of the work in elementary electricity which had been done two years earlier when the development of telegraph and telephone were described, just as in the chemistry course many illustrations could be taken from previous work on acid, base and salt and on some of the most important elements. A study of optics in the last year led to a unification of all the previous work and brought the story up to date. Since the students

were all in their 17th or 18th year, and since problem solving was only required from those who were also budding scientists, little difficulty was experienced in introducing material usually classed as advanced. The aim was to give a qualitative treatment of as many of the results of modern research as possible and of the problems raised by them.

Such a course stimulates the interest of the more philosophically inclined pupils. They see that science nowadays gives the philosopher the hardest nuts to crack and that scientific thought in its turn is very much in need of philosophic elucidation. Some of them may experience the present view of the physical world as philosophically unsatisfying. Even the modern youngster is still sufficiently self confident to expect to do better than his elders and this may well result in pupils choosing science as a study who otherwise would have taken up the humanities. But the course is also of the greatest value for the future scientist. A concentrated experience of the way in which theories and modes of thought change gives him a healthy scepticism in the matter of theories, and should make it much easier for him to break new ground later. Our present mode of teaching makes our future scientists far too hidebound. When they leave school they are already indoctrinated with the views accepted at present; it would be much better for them and for the future of science if they had more of Faraday's cautious attitude to theories. In any case no one should leave our schools at eighteen without having some idea about the philosophical implications of modern scientific thought. Too many people are still living in a comfortable nineteenth century universe; modern man must really face the challenge presented by more up-to-date views if he is to play his part in our cultural life. This challenge would, I am confident, bring many more students to the science faculties of our universities.

If the interest of the pupils is to be aroused, the way in which the picture of nature grows is also most important. It should take shape gradually over the years and at every stage account must be taken of the maturity of the child and his interests. At an early age the eagerness of the children to learn facts, to know what is the biggest of this and the fastest of that, can, for example, be used to teach a great deal about the variation in physical properties of different materials. Even if they bore the teacher, tables of expansion coefficients and of specific heats of refractive indices have in my experience a fascination for the youngsters, and arouse questions in their minds. Subconsciously at least they ask how these properties are related to the chemical behaviour of the same substances and to the use which plants and animals

make of them. Later on comes the stage where each teacher must know something about the work of the others. When talking about electricity the physicist must be able to point to the work in chemistry and to say something about electricity in the human organism and in electric fish. Only indications are necessary because the biologist and chemist will take up the work in more detail in their subjects. In this way wonder is aroused. As questions are answered at one level, they give birth to new and more profound ones, which are allowed to rest in the mind and are not immediately answered. If many remain still unanswered when the young men and women leave school, all the better. Wonder is the beginning of all scientific quest. At present we tend to send the children away with the illusion that they have learned most of the answers at least in their specialist studies, and that those which they have not learned somebody else knows and that they can look them up in the library. Can we be surprised, then, that they show the lack of interest and initiative of which many employers complain to-day? A wide knowledge of facts and phenomena always raises questions about their connections. If this comes together with the healthy scepticism about theories, which should be imparted by the historic approach, the children will be prepared to enter on their university courses with eagerness and expectation if they become scientists, and they should have a responsible and informed attitude to science if they enter other walks of life.

From what has been said above it is clear that there are two different aspects to the "humane" teaching of science. We must take the word "humane" really seriously and adjust our teaching so that we impart the knowledge and the experiences which our pupils should have in virtue of the fact that they are human beings and not because they may take up this or that profession. As men they must have the right relationship both to society and to nature. We may hope to have done something for the former if we have taught the historical part of the subjects correctly and have thereby introduced the children to the technical achievements of modern science and to scientific thought as a chapter in the spiritual development of humanity. Whether we establish a right relationship to nature will depend at least as much on the mode of our teaching as on its content. Paradoxical as it may seem, I am convinced that an attempt to be too scientific at too early an age can do more harm than good. After all there are two parts to the scientific method. Science starts by induction. Slowly the manifold phenomena of nature group themselves and reveal an underlying harmony, a logically connected body of scien-

tific law, from which we can then proceed to deduction, and thus verification appears only later. In the day to day working of the scientist the two go, of course, hand in hand but in the development of science teaching they should be consecutive. This brings us to the second aspect of "humane" science teaching. We must take into account the facts of human development. In my experience of secondary school science teaching I have found two quite distinct stages which I should like to call the "how-stage" and the "why-stage". The two, as always in natural development, have no absolutely hard and fast boundary but fifteen years is perhaps a good average. Before that age the children seem mainly interested in *how* things work, and *how* they were discovered. Despite some attempts in this direction I have never succeeded in arousing the interest of more than a small minority of a class of fourteen-year-olds in the question why the steam engine was developed just at the time and in the country where it was in fact first used; but I found a great deal of interest in how this happened. When the question *why* arises at this age, the children are usually satisfied by the most immediate explanations, which really describe *how* a thing happens. This is the inductive stage and theories have no place in it. If one tries to impose one's own desire for more fundamental explanations at this age, I think the result is often the all too familiar experience of science teachers that a considerable number of the pupils decide that science is an esoteric study which can only be understood by the few "of whom I am not one". There are, of course, always a number of pupils who are intellectually inclined, and who can be drilled even at this stage to ask the questions which we want them to ask, but this procedure leads to a loss of many potential scientists and is not even healthy for those who can be so drilled. This is the stage when many facts can be learned, and they should be drawn from all the sciences, provided it is done in a way which arouses wonder. The work so done provides the necessary broad basis for the second stage, that of presenting science as a logically connected system. This study can only be brought to a proper conclusion if the children stay until they are eighteen. One of the greatest menaces to good science teaching is the ever growing volume of even elementary textbooks of chemistry and physics which start with the atomic or electronic theories.

Two consequences are apparent from the above. Firstly, the time required for teaching all the sciences in the way outlined—and they must all be taught if it is our aim to establish a true relationship to nature—does not permit the high degree of specialisation practised in most grammar schools at present;

and secondly, it presupposes some form of education up to the age of eighteen. The latter is in any case provided for in the Education Act, and it only remains to implement its provisions. That this can only be done gradually goes without saying. As far as specialisation is concerned and some vocational or pre-vocational training, we have found in the Rudolf Steiner schools that this is not incompatible with general educational courses as outlined above which do, of course, include the humanities as well as the sciences. Boys and girls capable of a university education can by eighteen be brought to the standard of the G.C.E. advanced level in three specialist subjects in addition to the necessary ordinary level. If we also take into account that the necessity of advanced level work for university entrance is only a comparatively recent innovation, and that it is only in England that a degree can be obtained after so short a time as a three-year university course, the solution to our educational problem lies probably in an extension of the latter to at least four years. The advanced level courses could then be remodelled so that they only provide the really essential fundamental knowledge which is much less than the present content of the syllabuses, and an opportunity for the candidate to show in a restricted field that he or she is able to do work of university standard. The universities and employers would then get generally educated people who could specialise against a wide background of knowledge and experience.

In conclusion it should be emphasised that the work described above represents developments of Dr. Steiner's pedagogical indications by one science teacher only and that they owe a great deal also to work done by colleagues in this and other countries. I have also only written about the task of the teacher in humanising the material available in present day science. There is a similar task for the scientist. The high degree of specialisation in the sciences has led to the disintegration of the picture of the universe. Our knowledge of man especially, and of his place in nature, is only a very fragmentary one. A great deal of work is therefore required in the sciences themselves to make them into a truly humane discipline. It may be hoped that pupils who have gone through an education such as that described above will be better fitted to carry out this task than our own generation.

THE SHORTEST WAY HOME

by

R. EVERETT

FEW pupils leave school nowadays without having learnt Euclid's often quoted axiom: "The shortest distance between two points is a straight line".

This curt sentence might have been coined by a successful general. It smacks of efficiency, it is 'to the point' and suits our modern way of life.

Another axiom, less often quoted, is the proverb which tells us the very opposite: "The longest way round is the shortest way home".

Which of the two statements is true? Can they both be true?

In their metaphorical value the two sayings can well be applied to two divergent approaches in teaching. We could compare the passing on of facts from teacher to pupil with following the short-cut route. Experience has shown that pupils tend to forget these facts or, worse still, that they confuse them with the same efficiency with which they have 'learnt' them. In order to engender interest for a subject and to make children experience enthusiasm for its grandeur—and this is the only right way of learning—I have always found it necessary to go the round-about-way; I have also found it essential to 'trespass' on to other subjects whenever they could contribute towards a deeper understanding of the one in hand.

It is obvious that in order to understand the history of a nation one also needs a sound knowledge of the geography and the climatic conditions of its country. How then can one hope to understand the man-made problems of the world to-day without first trying to gain an understanding of Man himself? How can one learn to understand anything at all without going below the surface of outer appearances?

Teachers in our schools are fortunate in being encouraged and inspired to delve into the depths by the vast treasure which Rudolf Steiner has created for use in teaching. As an illustration I should like to offer one example from a Course on "The Study of Man" given to Class VIII (i.e. to boys and girls aged fourteen plus), where I have found it helpful to use Music, Botany and

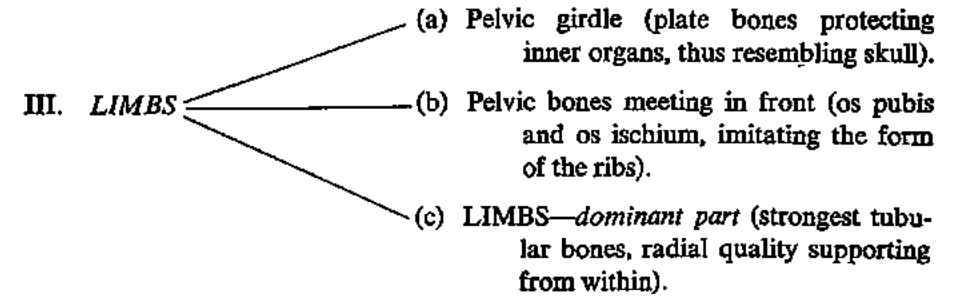
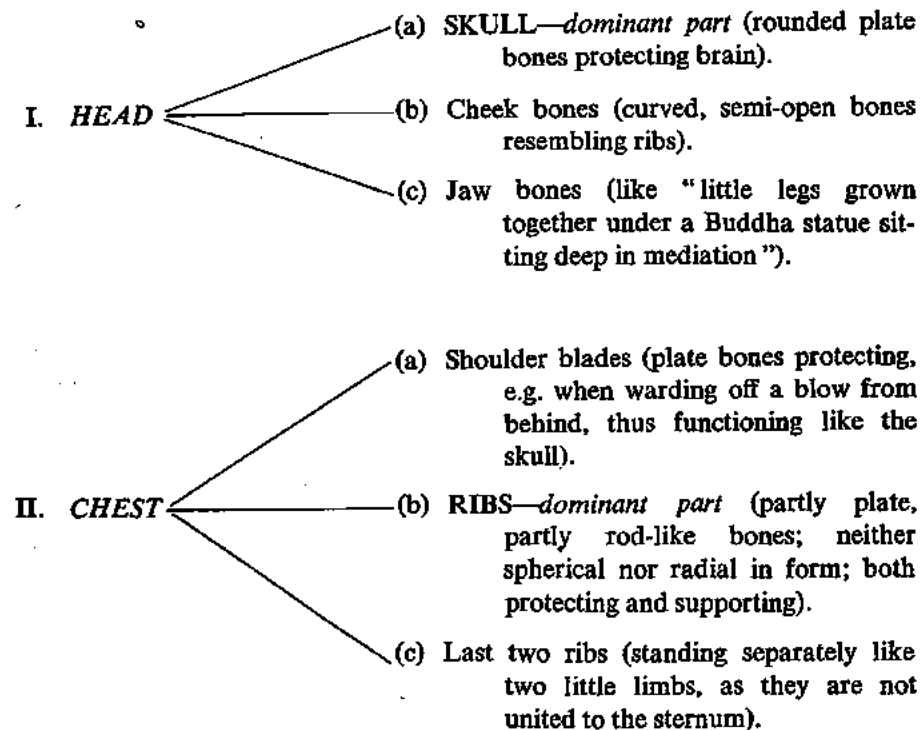
Geometry for the understanding of Goethe's discovery of the metamorphosis of the bones.

This period on the Study of Man was one of the last which I was to give as class-teacher to this particular group of adolescents before passing them on into the hands of specialist teachers in our Upper School.*

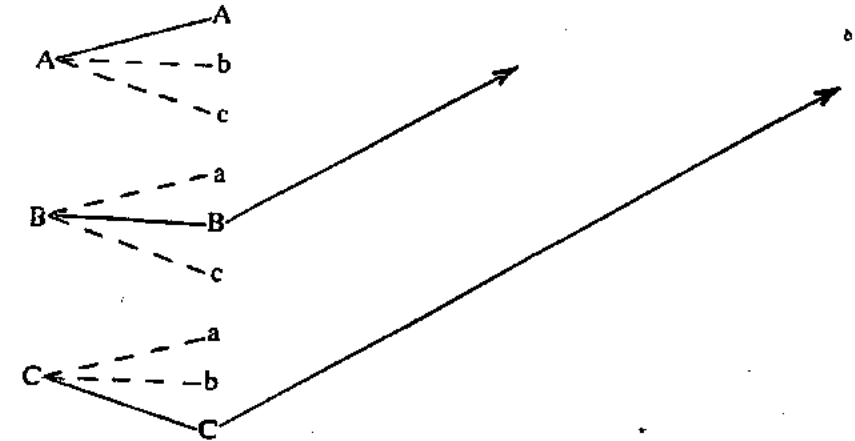
To go into details of the rather intricate period on the Study of Man would be beyond the scope of this article, and I can only mention in passing that we had been trying to build up a living picture of Man from several different aspects until we finally reached the human skeleton right at the end of the course. Rudolf Steiner showed us how (and why) at this stage of puberty boys and girls are experiencing the heaviness of their own bones which leads to the well known 'gawky stage' of the early teenager, who has lost his hitherto natural grace and who tends to show a lack of co-ordination in his movements. Dr. Steiner therefore asked his teachers to awaken in children at this particular stage a feeling for the beauty that lives in the human skeleton. Yet this beauty is not at all self-evident to adolescents who would probably see "nothing but bare bones" if merely put in front of a skeleton. They need to be guided step by step towards a recognition and appreciation of the wisdom, the rhythm and the purpose which live within the architecture of the bones. I therefore kept our (borrowed) skeleton safely locked in the classroom cupboard until the last few lessons, but began our study by asking the class to draw diagrams of their own skeleton on pieces of paper. As none of the pupils had ever looked properly at a skeleton before, my request did not receive a warm welcome, but I nevertheless persisted and persuaded them to use their imagination and, where necessary, to feel their own bones with their own hands. The comical situation which followed and the uproariously funny results of this first meeting with the 'living skeleton' will hardly ever be forgotten. Yet slowly we came to discover the threefold nature of the human skeleton (still refraining from using the skeleton in the cupboard!) and we found its three archetypal forms: the rounded form of the skull standing in opposition to the radial form of the limbs, and met half-way by the in-between-stage of the thorax with its ribs. We also learned to distinguish how arms, though principally of the same design as the legs, had been freed from the heaviness caused by the gravitational pull of the earth so that they could develop a much finer and lighter build to enable man

* A class-teacher in a Steiner school teaches the main subjects to his class for eight successive years in main-lesson periods, each lasting approximately four weeks and occupying every morning from 9 a.m. to about 11 a.m.

to perform the intrinsically human actions. (Later on we exchanged the bones of one leg with those of one arm on the same side of the skeleton to show this contrast of 'above' and 'below' quite drastically.) When at last, after much preparatory work, the skeleton was shown to the class, a solemn and almost meditative mood pervaded the classroom, and further and deeper observations could now be made. For instance, we observed how the main function of the plate bones is to protect from without (i.e. in the skull), whereas the function of the rod-like bones is to support from within (e.g. in the limbs). We also rediscovered the threefold nature of the skeleton, so apparent in head, chest and limbs, in each one of the three parts: so that each main part has again its subordinated head, chest and limb parts, but with one part dominating over the lesser two. Thus we arrived at the following arrangement.



The same can be simplified algebraically as follows:—



We also learned that within the deadest part of Man's body, within his bones, there lies a hidden source of life in the bone marrow, which creates new blood; a symbolic picture, for ever pointing to the mystery of death and resurrection. This is expressed in a verse of the Mediæval Alchemists:—

Behold the Man of Bone
And thou beholdest Death—
Behold within the bone
And thou beholdest the Awakener.

There was, however, one further idea which I felt unable to bring to my pupils at this stage, and this was the previously mentioned discovery of the

metamorphosis of the bones. I therefore left it in abeyance for the time being, and began the next main-lesson period of Mathematics. Fortunately we had a piano in our classroom and, as a reward for hard work, some fifteen minutes of each main-lesson were devoted to music.

During the first week I played a theme with variations by Beethoven until the class was thoroughly familiar with both the theme and every variation. (A simple set of variations found in Beethoven's collected variations is far more suitable for this purpose than the more complicated examples in his sonatas.) Soon the class could sing the theme while I played only the left-hand accompaniment; they could recognise the theme when it was hidden in variations; they learnt to describe the different moods living in each variation, such as a 'playful', a 'wistful', a 'boastful' and a 'sad' mood, etc.

During the second week I played another set of variations on an original theme, this time by Mozart (the first movement of the well-known A major sonata), which the pupils already knew from previous Eurythmy lessons.

When after a fortnight my class had really developed an experience of the meaning, "Theme and Variations", we discovered this idea in many other examples, such as in "Man" the archetype, or theme, where each human individual appears like a variation.

In a separate set of lessons I then asked the pupils to think of as many different parts of the plant as possible. (This brought back to mind a Botany main-lesson period, given some two years previously, where foundations had been laid on which I could now build fairly fast.) These parts of plants were written on the blackboard in the order in which they were mentioned, and then we sorted them out into groups belonging together, such as: petals, stamens, pistils, sepals, carpels, fruit, seed, etc. Looking at the list of the different parts of the plant the pupils were asked whether they thought that each part was absolutely different from each other, or whether these parts somehow were mysteriously linked together by some invisible bonds. The words "Theme and Variations" came out spontaneously from several pupils. It now was comparatively simple to find the theme hidden in the leaf which is the central part of the plant in general, so that we could make the following list. (Most examples in the plant world were supplied, or rather 'discovered', by the pupils themselves and doubtlessly countless other examples could be quoted. The original discovery was made and published by Goethe in his "Metamorphosis of the Plant".)

THEME: THE LEAF

Variation I:	Roots resembling leaf in:	all bulbs consisting of thick, fleshy leaves.
Variation II:	Stem	" " : all grasses; rushes, iris leaves.
Variation III:	Bud	" " : tulip; the "sticky-buds" of the horse-chestnut.
Variation IV:	Sepals	" " : the rose; the bracts of the marigold.
Variation V:	Blossom	" " : arum lily; Christmas rose.
Variation VI:	Petals	" " : tulip (the petals are coarser and green before they reach their final colour).
Variation VII:	Pistil	" " : the bluebell; peony.
Variation VIII:	Stamens	" " : dahlia, chrysanthemum; double daisy (stamens reverted to petals).
Variation IX:	Carpels	" " : buttercup.
Variation X:	Fruit	" " : peapods; lupins.
Finale:	Seed	" " : "flying seeds", e.g. lime or ash trees; honesty seed.

And so all plant parts were recognised as modifications of the original 'mother-leaf'; they were found to have adapted themselves to special conditions of their environment (the tough roots to the earth, the tender blossoms to the light, etc.) and in their specialisation they had revealed the wisdom of a divine plan which Goethe called the Archetype of the Plant (Ur-Pflanze).

During the following week (now a month after the end of the "Study of Man" period) we looked again at the human skeleton and experienced once more the three archetypal forms: the *sphere-like form* of the skull, which is like the vault of the starry heaven above us; the *rod-like forms* of the limbs, which the gravity powers of the earth have formed; and the *looping movement* of the ribs, which reminds us of the looping movement of the planets (Goethe).

We then observed separate bones, modelled and drew them, and noticed the three fundamental forms in *each individual bone*, in a similar way to that in which we had found the threefold nature of the whole skeleton revealed in each of its three main parts. Thus in the femur we found a sphere-like shape at

the top, a looping movement in the "twist" of the bone and, dominating over the other two, the main rod-like bone. After looking at many different bones in this way we tried to find the least specialised kind, the one which would show the three forms in the most balanced way and so, at long last, the vertebra with its spherical, radial and looping form was discovered to be the underlying Theme of the many beautiful variations in this "Frozen Music", our skeleton.*

The straight line or the longest way round—which? We believe that in educating children to-day a teacher needs to bear in mind two quite different aims, of which the first is the generally accepted attainment of knowledge, whereas the second is the fulfilment of the children's needs in their different stages of development. Teaching can thus become a healing, or at least a strengthening and developing of latent capacities. This second way can never be the short way which brings quick results, but it leads us beyond the world of matter into realms where forces are at work which we can trace in the wisdom of outer objects. Thus the longest way round can lead us back to the world of the spirit, to our true home.

P.S. Elmfield School still does not yet possess a skeleton and it is becoming more and more difficult to borrow one. Perhaps there may be one somewhere in somebody's cupboard, waiting to join our ranks?

THE RHYTHMS OF THE YEAR

by

EILEEN M. HUTCHINS, M.A.

A FEW centuries ago man had no doubt that the world of nature and the life of his own being were intimately related. All that was manifest in the outer world as warmth and light, as water and rock formation, found its reflection within him. The rhythms of the stars were repeated in processes of his body. He had confidence that the changing forms of nature were divinely guided and that he himself was surrounded and upheld by spiritual beings.

In our age of abstract knowledge we feel completely separated from the outer world. We can formulate laws and regulate phenomena to gain increasing power over the realm of matter; but the assurance that man is in miniature⁶ an image of the whole universe has been lost.

In many ways the little child can still be like the man of olden times. When children have grown up in the country, unspoiled by too many modern amenities, they can often remember early experiences like those described by Wordsworth. They can recall a time when the whole world was instinct with life; trees, flowers, stones and shells were their playthings; nothing was lifeless or dead and they themselves were never alone; for all were united in the light of universal goodness.

Most modern children cannot share this happiness. Living in towns where street lights have obliterated the stars, the distinction between night and day is lost; central heating, electric light and comfortable cars have banished the rigours of winter; and how can those who are supplied all the year round with blooms grown under glass have a full sense of the miracle of spring? The city child, who builds his play world out of his material possessions, soon realises their destructibility. He has no ever-present examples of the renewing life of nature or of the magical changes of cloud and sky. The in-born trust of all young children in the essential goodness of life is lost and all too soon there is awakened anxiety for the countless possibilities of accident and separation.

This anxiety expresses itself in many ways, in nervous excitability, senseless destructiveness, wilful opposition and so forth; but one of the most disturbing symptoms is the fear of going to sleep. This does not arise from dread of being left alone or from terror of the dark, but it is a fear of yielding up consciousness and giving one's being into the power of the unknown. The

* There is one flaw in this method of exposition of which I am well aware, and this is the fact that there is a definite difference in the meaning of the words "Variation" and "Metamorphosis". A variation is a more superficial change, whereas metamorphosis means a breaking through to something new, not unlike a musical fugue which grows and goes through different keys during its development while the "round" or "catch" always remains at the same level. Nevertheless, it seemed justified to use the example of "Theme and Variations" to illustrate Goethe's Metamorphosis of the Bones, because many musical variations are really metamorphoses (especially if they have been created by a genius like Mozart or Beethoven) and because the concept of "Variation" could thus become a bridge leading over to the more subtle concept of metamorphosis.

healthy child can every evening renounce its hold on the waking-day world, but there are few to-day who can still do this in later years. There are an increasing number of cases of nervous disorder and mental breakdown due to lack of ability to sleep. All kinds of soporifics are used but none can give the life-giving refreshment described in Coleridge's 'Christabel'.

For she belike hath drunken deep
Of all the blessedness of sleep.

Lacking this renewal, vitality is weakened; for it is not only rest from the wear and tear of the day that we need. During the night we quietly absorb and develop what we have learnt or done during our waking hours. If our sleep is disturbed, the power of learning with our whole being is stunted.

The child who fears to sleep, fears also to face the events of the day. Every modern school has its numbers of nervous, unconcentrated children who cannot learn or settle to any task. Every Youth Club has its young people who can find no foundation on which to build their lives. They feel themselves caught up in a mechanical universe where their own particular misfortunes are due to blind chance and where individual effort is meaningless.

One of the first tasks of the educator should be to renew for children their lost relationship with the world of nature and to bring them once more into the healthy rhythms of life; the interplay between day and night, summer and winter, youth and age.

During the first seven years of childhood this can best be done through a wise ordering of the life of habit. The contrasting moods of the morning with its call to joyous activity and the evening with its need for laying aside all personal affairs, should be strengthened with a morning and evening prayer or song. Meals should be regarded not as a time for 'stoking up the engine' but as a festival of sharing with others the gifts of the earth. The ceremony of grace even for little lunch in the Nursery Class is important, for feelings of devotion are aroused too rarely in children to-day. Habits should not be only utilitarian. A child should not be told to wash its hands before dinner for fear of germs but so that it may be fit to share in a social gathering. It should not have the impression that milk is boiled to prevent the spreading of disease, but rather that the process of cooking is a continuation of the work of the sun in preparing the food. The little one needs to feel that deeds are done every day in a particular way because they are right and good.

Well established habits alone have a healing effect; but in the Nursery Class there are also other ways of strengthening confidence. Old folk tales are

an unfailing source of wisdom. In the first seven years of life children cannot yet follow time processes or stages of development but they can live in the activity of the stories and grasp isolated pictures. The themes of the good and bad little girl—simpler in the version of the old woman at the well, more complex in the tale of Mother Holle—are especially suitable. The good child is the one who can enter with sympathy into the needs of those around; the bad child is the one who lives only for herself. These tales, with their affirmation of the inviolable power of innocence and of the help given by the world of nature to the one who does good, can restore faith in the beneficent guidance of the world.

Further help can be given through ritual singing games. Only fifty years ago or so it was still a custom at children's parties to play the age-old round games. The meaning had been long forgotten but children still took joy in singing the sequences illustrative of birth and life, of love and death. Such a song as "Round and round the village" is none other than the story of the entry of the soul into the earthly body with its windows of the senses; of the chief event of life on earth, the finding of the soul mate; of the quest together for the ideal; of the final parting and of the return to the circle from which the individual first emerged at the beginning of the cycle.

These games are no longer played on every village green; and so it is desirable now to compose ritual action songs according to the needs of the children and the seasons of the year. There can be the winter quest where they set out in search for the One who is to be born at Christmas and where they are aided by the beings who figure in all old folk stories, the gnomes who inhabit the rocks, the undines and elves who live in the water and the light, and the fiery salamanders. Or at midsummer a singing game can be arranged from an old Rumanian ceremony where, garlanded with flowers, the children drink of the well which gives them access to the hidden realms of nature, the secret shrine of a Demeter figure, 'The White-robed Mother'.

When children have entered the class teacher period in their seventh year it is possible to speak to them a little more directly of their connection with nature. They can become more aware of the contrasting qualities of the day and the night; the day with its manifold interests and delights; the night when all has to be laid aside and renounced. They can then feel imaginatively that sleep is indeed the twin brother of death. Every night we happily resign our own activity and give ourselves into the hands of wiser powers. Death is sleep in a grander form.

Long ago men felt that the actions of the stars were reflected in life on earth and similarly the deeds of human beings could be the cause of joy or disharmony in the heavens. A feeling of this inter-relationship is healthy for children. One can speak with them of the sun who, as long as life on earth shall last, pours forth his warmth and light so that all things can live. One can awaken in them the wondering awe that the sun is never weary and never needs to sleep. We are worn out with only one day's effort, but the sun passes on to other lands to lavish his gifts without ceasing. One can ask them whether we have any qualities which resemble those of the sun. Are we capable of warmth? Can we ray forth light? Do we help others to live? The children can always find the answers to these questions and it is good for them to do so. Then perhaps the answers can be formed into a verse such as the following:—

O Sun so bright,
Thou giv'st thy light
And warming love
From Heaven above,
That life on earth
May come to birth.
May our eyes shine
With light like thine;
May our hearts know
Thy warming glow;
May our hands give
Such strength to live;
That we may be
A Sun like thee.

A contrasting picture can be given of the moon who so loves the sun that she has renounced all light of her own in order to reflect his radiance. But she does not keep this only for herself. She lovingly circles the earth and bestows the measure of light that is needful so that the darkness of the night may be illuminated. And her light ebbs and flows like the tides, like the plant world and like our own sleeping and waking.

In this way we paint a contrast between the creative activity of the day and the devoted renunciation of the night.

In the Nursery Class children have heard in the old folk tales of how man is helped by the animal, plant and mineral worlds. In his eighth year he

can be shown how the animals often represent in a slightly exaggerated way the feeling qualities of human beings. Aesop's fables illustrate the just reward for the cunning of the fox, the stupidity of the goat, the magnanimity of the lion and so forth. At the end of the series it is always important to show how man himself, when worthy of his true rank, is the leader of the animal world. The teacher can tell of St. Francis and the wolf of Gubbio or of some of the Irish saints. There is a beautiful tale of St. Columba who collected round him in his cell a cow, a crane, a cat, a mouse, a wren and a fly, who all lived together in friendship. But one day, enraged at the injustice of the king, Columba was induced to join in a battle. He returned to his cell to find all the creatures attacking one another. In terrible grief he realised that they were only following his example. Kneeling down in contrition he begged heaven for forgiveness. Straightaway the cat dropped the mouse, the wren released the fly, the cow, who had been carried off by thieves, was returned, and peace was restored.

In their first lessons about the plant world, it is deadly for children to count sepals and stamens and to dissect blossoms and fruit. Not only should the life of the plant be given in connection with its whole surroundings but it should also be shown as a picture of what we can ourselves become in our moral and ideal life. The teacher can describe how the seeds lie like stones through the cold winter nights under the light of the stars. There are no flowers on earth but from above fall the tiny star-like blossoms of the snowflakes. Then in the light of spring and in the warmth of the rain the seeds find the force to unfold and, rising above the dark earth, they strew the meadows with earthly stars. Or he can speak of the plant which grows in the heavy clay and draws into itself so much of the substance of the earth that it builds a fortress of sharp thorns and of bitter poisonous bark. Yet so great is its striving for the warmth and the light that it overcomes the nature of the rock and puts forth the most fragrant flowers of the whole garden. It is good for the children themselves to name the plant which is thus described. A teacher should never moralise but descriptions of this kind awaken joy and enthusiasm. In the words of Goethe, "All things transitory but as symbols are sent". Nature is for ever presenting us with pictures of transformation from lower to higher forms and these can become active in the souls of the children and sow the seeds of later idealism.

It is a custom in Rudolf Steiner schools to celebrate the festivals of the seasons and it is possible through them to awaken imaginatively something of the experience of early man in his relationship with nature.

Perhaps at midsummer we can most easily recapture the young child's sympathy for all the world. In the warmth of summer days we have a sense of well-being and it is difficult to be fully conscious and wide awake. It is a pity that the quality of the season is so little appreciated that examinations are set in June and July. The dream-like condition out of which man creates in his works of art would be more rightly fostered at this time. But it was a true wisdom which led to the celebration of midsummer with music and dancing. At a time when consciousness is dimmed we need the rhythmical form of the dance and song so that we do not completely fall victim to the illusions of uncontrolled phantasy. The misleading nature of the dreams of midsummer is shown in folk tales and in Shakespeare's play.

In many ways Michaelmas can be celebrated as the crown of the year. At this time of harvest we are most conscious of our debt to nature; and our gratitude to the divine powers that have blessed the work of man can be most strongly aroused. But Michaelmas is also the moment when all life is beginning to withdraw. The harvest is gathered, the fields are bare, the darkness of winter is descending. Long ago man experienced a very real fear that the forces of death might be too strong and that the earth might not be able to reawaken in the spring. Then it was that the wise teachers gave certain riddles and questions to be pondered. We are fortunate that many of the Old English riddles have been preserved and we find that nearly all of them speak of the changing forms of nature or the work of man. In one poem activities are described such as the riding of the sea, the sinking of ships, the birth from water and the return to its origin; and the doer of these deeds, the iceberg, has to be named. Another tells of the plant, rooted beside the wave, torn from its home and shaped with a knife and a strong right hand; once mute, it became free to speak and sing. In pondering these themes the man of olden times was led to realise that in the world of nature one form had to go through death before new life could arise; and in the work of man one object might have to be destroyed so that another could be created. This was the Michaelmas theme.

The deep winter night was not only a time of great discomfort but it was also the season when evil was rife. Shortage of food and danger of death from cold drove men to rob and kill without mercy. It was at this period that the teacher brought those who were willing to learn to a particular experience. Pupils were led into a dark vault where they gradually became aware of a globe. At first this was dimly illuminated from in front but gradually the light moved until it was completely hidden. The globe then appeared only as a black disk.

But from behind the disk a light, irradiated by colours, shone out into the darkness of the vault. Then the teacher would say, "Thus it is with the world in winter. The sun has retreated; but just as the light is shining forth from behind the globe, so the sun is still giving out its warmth and light. Waken in your hearts this picture so that you may know the sun is always with you. Then you will receive strength".

There is so little hardship for most people in our modern winters that the Christmas story loses a great deal of its meaning—quite apart from the fact that it is generally celebrated as a Saturnalia of feasting and of the giving and receiving of presents. Something of the old rigour should be imaginatively reawakened as an introduction to the joys of the carol singing, of the Christmas plays and of the lighted tree.

We need the experience of the winter death in order to know the abundant joy of returning spring. Although the story of the crucifixion in all its details is too strong for children under eleven or twelve years of age, the beauty of the resurrection theme can be presented in many different ways. There are Easter stories for all ages, from the legend of the Easter hare to the themes of Iduna and Persephone which can be told in connection with the season even before children are ready for the series of Norse and Greek myths. Every kind of new life from farm and garden, uncurling leaves, opening buds, even baby animals or birds can be brought to adorn the festival. There is no difficulty in arousing wonder and delight at the beauty of the reawakening spring.

The rhythmical repetition of the festivals of the seasons is just as important for the growing child as the regular alternation between waking and sleeping. We depend on our sound sleep for our healthy activity during the day. The sources of our creative expression in art are found in the interplay of feeling between darkness and light, sorrow and joy, remembering and forgetting. To-day we are afraid to forget just as we are afraid to fall asleep. We are apt to consider that knowledge is not really ours unless it is present, fully formed and complete, at a moment's notice. In teaching there is the perpetual niggle of weekly tests and termly exams. Children are not sufficiently allowed to ponder and absorb what they learn. Just as the skater or the rider, who has once mastered his art, has to forget the separate steps by which it was accomplished; so the pupil needs to allow the experiences which have moved him most deeply to sink below the threshold of consciousness. In this way they mature and foster capacities for future thought and action.

There is one rhythmic process for which to-day we have very little under-

standing. We cannot recognise the true qualities of youth and age. Particularly in the West there is so great an enthusiasm for youth and such a fear of old age that small children are treated as little adults while ageing women try to preserve the appearance and charms of youth. In general both men and women of declining years are anxious to cling to interests and pursuits suitable for the young rather than to prepare themselves for old age. One result is that young people find it very difficult to respect their elders. They are determined to manage their own lives without guidance, at a time when they have no conception of the pitfalls ahead. Without any kind of understanding they are prepared to throw over all tradition and to discredit everything done by older people. Part of the terrible decline in the artistic and social life of to-day is due to this attitude.

A counterbalance can be given in the History and Literature lessons of the upper school. It can be shown that the life of a race or of a civilisation is in many ways similar to the life of man. Each culture has its early youthful vigour, its serene maturity and its decline. Furthermore no civilisation is entirely self-sufficient, each draws inspiration from some achievement of an earlier time. In the wars of Troy the Greeks, who were still in some ways primitive and barbaric, represented a new era in which men were to become more self-reliant and freer from the guidance of their priests. The Trojans stood for a much older tradition of life which already showed signs of decline. In the Iliad Hector appears as a wiser and more mature character than Achilles; and although he fails, Achilles learns from him. Hector fights because his position as a prince of the Trojans requires it, but he finds no zest in the conflict. Achilles is activated by his burning fury to avenge the death of his friend. But after the fall of Hector, when at last the aged Priam comes to beg for the body of his son, Achilles feels compassion. When his own death is approaching, he is stirred by a different quality from the fierce, brilliant courage which dazzled friend and enemy alike; he is able to know pity.

The teacher can also illustrate how often the country which appears to lose is from another point of view the one which gains the victory. When the Romans conquered the Greeks, outwardly the leadership of Greece was brought to an end; but the Romans, realising their own poverty in the realms of art and literature, brought back Greek tutors for their sons; and for many hundreds of years artists and poets took the sculptures and writings of Greece as their models.

The apparent end of a movement or civilisation should not be considered only as a tragedy. The Templar Order, which united the ideals of the priest, the knight and the merchant of the Middle Ages, was destroyed. But Henry the Navigator, who launched the series of explorations which finally led to the discovery of the New World, drew his inspiration from the Templar Movement which in Portugal still lived on under another name. The wisdom of Ancient India for centuries lay hidden from the West. But just at the beginning of the Industrial Revolution when England was in danger of turning completely to materialism, the merchants of the East India Company came into contact with the great Indian epics and under their auspices the Bhagavad Gita was translated into English.

In the early years of their schooling children were led to experience certain truths in pictures or symbols taken from legends or the realms of nature. In the upper school it is possible to bring these themes to them consciously. They saw how in the nature world death is the prelude to a new form of life. They can now learn of the last teachings of Socrates and follow his proofs of a life after death. Among other illustrations he showed how night gives way to day and winter to spring; similarly death must yield again to life.

Pupils should also learn to acknowledge the part played by individuals in serving the processes of development. Leaders of thought, discoverers of new lands, liberators of their country, were all characters who saw the need of a new order and rose to the occasion, often at the sacrifice of their own lives. But to them death was as nothing compared to the achievement of their ideals.

It would not be good if examples of this kind were given from Literature and History while the teaching of the Scientific subjects followed a purely materialistic trend. It is right for the study of Mathematics and Science to have a prominent place in all schools to-day and for a high standard of abstract thinking to be required. But the Sciences too can strengthen man's connection with nature rather than estrange him. Machines can be shown as extensions of man's own organs; the lever and the pulley as elaborations of the movements of arm and leg; the camera as an imitation of the working of the eye. The lives of scientists and mathematicians should be given so that pupils can appreciate the accuracy of observation and the effort of thought required before new laws can be formulated. Most important of all, they need to realise the sense-free self-supporting quality of thought in pure Mathematics. Arthur Koestler describes in his autobiography, "The Invisible Writing", how in the Spanish Civil War while he was in a prison cell, waiting for death, he began to ponder

certain mathematical formula; and, thinking of the proof that the number of primes was infinite, he felt suddenly illuminated. He realised that "a comprehensive statement about the infinite can be arrived at by precise and finite means. The hours by the window had filled me with a direct certainty that a higher order of reality existed and that it alone invested existence with meaning".

It is widely recognised that however necessary technical and scientific knowledge may be, this alone does not give all that is needed for life. In several of his books the writer and explorer Laurens van der Post has sought for the basis of understanding between human beings of different races and between man and nature. He has found the answer not in a still higher degree of scientific training but in man's mastery over himself and his awareness of his relationship with others. In his latest book, "The Lost Tribe of the Kalahari", he describes the mood of sympathy needed to explore the wild heart of Africa and to win the trust of the fast disappearing Bushmen.

We may well ask how these qualities can be cultivated: not when knowledge is regarded as a means of power and when learning is undertaken in the spirit of competition. There has to be another path of training where pupils become receptive to the changing appearances of the world of nature and to the hidden ideals and impulses of their fellow men.

THE WHOLENESS OF IMAGINATION

by

A. C. HARWOOD, M.A.

(A Lecture delivered at Attingham Park Adult College)

EVERY language possesses words of special historical value. Such words are windows through which we may catch glimpses of the developing human consciousness. Perhaps the word which of all modern words gives the most profound view into this changing landscape is Imagination. It is a word which has had a growth almost opposite to that which generally obtains in language. It is the usual fate of words to lose their original active quality and die into abstraction. 'Imagination' began as a thing, a *noun*, meaning a concrete pictorial representation: then at a definite point in history it sloughed off its noun-skin, and appeared all new and glistening as a force, an active principle of the mind, as in essence a *verb*.*

The transformation occurred about the year 1800, and was accomplished by the great poets of that extraordinary age, by Blake, by Wordsworth, Shelley and Keats and above all by Coleridge, who being a philosopher-psychologist as well as a poet gave definition to the new word within a theory of knowing and being. Shakespeare was almost alone in anticipating the new active use of the word when he made Duke Theseus in the *Midsummer Night's Dream* say that in the poet's mind Imagination "bodies forth the shape of things unknown". But the general use of the word in his time was that of the Magnificat in the Authorised translation of the Bible: "He hath scattered the proud in the imagination of their hearts"; which means, of course, "He has destroyed the picture they have of themselves".

There is a deep historical reason why the poets of the time of the industrial revolution needed to attach a new meaning to the word Imagination. From the earliest ages men had always thought in pictures. Mediæval thinking still lived in such a world of pictures, which it had received from the Greeks, who had in part received it from the Chaldeans, who had received it from, literally, God knows where. It was a world in which the heavens and the earth were part of one great spiritual being, in which stars and planets lived on the earth as influences in stones and plants and animals, in which man, as the supreme of

* See *History in English Words* by Owen Barfield (Faber & Faber).

creatures, was an image or microcosm of the universe; a world, therefore, into which man could place himself with all his powers of heart and mind and soul, as scientist, as artist, as poet, as philosopher, as mystic. But after the sixteenth century a new world had come into being, the world of Bacon, of Descartes, of Locke, of Newton, where mechanical forces worked on each other at a distance, or 'billiard-ball' atoms chivied each other in proximity, a world which could only be pictured, if it could be pictured at all, in terms of a wound-up clock or other mechanism, a world into which man could only insert himself by becoming a part of that mechanism. The reasoning mind had separated itself from the instinctive picture-forming faculty, poetry and science had fallen apart, and religion was already trying to keep a foot in both worlds.

To begin with, the objectivity and practical triumphs of the new scientific consciousness carried all before them.

"Nature and Nature's laws were hid in night,
God said 'Let Newton be', and all was light".

But by the end of the century more sensitive spirits were recognising that the science whose object was power over nature was in fact divorcing man from nature, that man was losing himself in conquering the earth.

First and fiercest of these spirits was the visionary William Blake, for whom the mathematical consciousness of Newton was merely a kind of sleep—the sleep of Ulro he called it in his prophetic books. "God us keep", he wrote, "from single vision and Newton's sleep". Locke, Newton, Voltaire, Johnson and their like were the objects of Blake's anathema, the people who saw in the sky a "disk of fire somewhat like a guinea" where Blake saw an "innumerable company of the Heavenly Host, crying, 'Holy, Holy, Holy is the Lord God Almighty'." For Blake regarded Imagination as the divine, the Christ principle in man. "O Human Imagination", he writes, "O Divine Body I have crucified!" It is the Imagination won through mental fight which will restore to the soul the vision of God and build 'Jerusalem'—the heavenly state of the soul—in England's green and pleasant land.

Blake was a soul standing apart in his age, whose prophetic voice is only now beginning to be heard and understood. It was Wordsworth and Coleridge who mediated the idea of the creative imagination into the language and thought of England, Wordsworth more successfully because he kept within the sphere of poetry, where one could still pretend there was one truth for the imaginative mind and another for the rational (we must not forget that Wordsworth's rational mind denied the imaginative vision of his *Ode on the Intima-*

tions of Immortality in Childhood); Coleridge more profoundly because he saw the implication for the whole of life of the faculty of creating images. For Coleridge believed that imaginative thinking—thinking in pictures—is continuous with the divine act of creation. We become spectators when we think about the world abstractly, we unite ourselves with the world when we think in images. It was the danger of becoming mere spectators and losing contact with reality which made Coleridge warn his generation of the danger of thinking without images. He felt the loss of living reality even in the 'billiard-ball' universe of his day. In the modern age, when the scarcely pictureable universe of Newton has passed into the completely unrepresentable world of mathematical physics, Coleridge's warning has a new insistence.

Coleridge was an exact thinker and believed in making what he called 'fruitful distinctions'. He began by dividing Imagination into two parts,⁹ Primary and Secondary. Primary Imagination he describes as 'the living power and prime agent of all human perception, and a repetition in the finite mind of the eternal act of creation in the infinite "I am".' This means that even the simplest act of perception is not (as the analogy of the camera has led most people to believe) an act of passive reception, but an act of creation, and an act, moreover, which is continuous with the divine act of creation itself. Man instinctively thinks in images because God created the world in images. This first kind of Imagination is something which is 'given': it is the primeval picture consciousness which still speaks to us in Myth and Saga and Fairy Tale, and into which all children are born. But Secondary Imagination is something over which we have conscious control. Coleridge says we must think of it 'as an echo of the former, co-existing with the conscious will, yet still as identical with the primary in the kind of its agency and differing only in degree and in the mode of its operation. It dissolves, diffuses, dissipates *in order to recreate* . . . and, even where this is impossible, yet still it struggles to idealise and unify'.

It is this seeking for unity, or ideal wholeness, which Coleridge used as a touchstone in another 'fruitful distinction', that between Imagination and Fancy. He invented the dreadful word 'esemplastic' for the power which Imagination wields of fusing parts into a living whole. This fusing is only possible if every part has in it the *quality* of the whole, is connected inwardly and plastically with the whole, is something like a microcosm of the whole. Fancy on the other hand has only an 'aggregating' power. It has 'no other counters to play with but fixities and definitives'. It builds an agreeable totality

by similarities and contrasts, but these are of an external kind only and add nothing of essential meaning. Being a poet, Coleridge naturally applied the distinction in the first place to poetry. He gave as an example of Fancy a verse from Shakespeare's *Venus and Adonis*:

"Full gently now she takes him by the hand,
A lily prisoned in a gaol of snow,
Or ivory in an alabaster band,
So white a friend engirts so white a foe".

Here almost the only thing which connects the images together is the external appearance of whiteness. There is no inner significance linking together a hand, a lily and a snow-prison. With this passage he contrasts, as an example of Imagination, another two lines from the same poem:

"Look, how a bright star shooteth from the sky,
So glides he in the night from Venus' eye".

Here the comparison carries a depth of inner meaning, the swiftness and silence of the movement, the finality of the disappearance, the blankness and darkness when the bright one is gone, the hopelessness of pursuit.

Such a distinction is fruitful in any of the arts. In literature it is a touchstone to distinguish verse from poetry, and might with advantage be applied to much modern writing. But Coleridge by no means considered Fancy and Imagination as opponents or enemies. On the contrary he thought that the one could hardly exist without the other. 'Imagination must have Fancy', he wrote, 'in fact the higher intellectual powers can only act through a corresponding energy of the lower'. A young writer will enrich his perception in the sphere of fancy; only maturity brings true imagination. But if Fancy holds its domain in fee to Imagination, it is nevertheless a rich domain with hunting grounds of its own in which the over-lord will not despise the game.

Imagination not only gives significance to a whole poem (or work of art in general) it invests even the single words with *meaning*. The greater the poem the more we need to call forth the imaginative quality of every word. We need not do this to any great extent with a simple descriptive poem such as Gray's *Elegy*:

"The curfew tolls the knell of parting day,
The lowing herd winds slowly o'er the lea,
The plowman homeward plods his weary way,
And leaves the world to darkness and to me".

This is a scene which is easily pictured, a painting of great charm but no great depth or richness of colour. Contrast this verse with a passage from Shakespeare's *Tempest*:

"The cloud-capp'd towers, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit shall dissolve
And, like this insubstantial pageant faded,
Leave not a wrack behind".

The apparently simple catalogue with which the passage begins is deceptive. In reality it calls forth in the fewest possible images the totality of human achievement on the earth. Tower—palace—temple, with what a wealth of meaning we can, and must, invest these simple words if we are to appreciate these lines!

If Imagination invests words with their meaning, the reverse is true that without Imagination words become mere counters or symbols. They turn into a kind of algebra. But like the symbols of algebra they can be made to work even when they have no meaning. Some modern philosophies deal with words as mere algebraical symbols—and in the process human values disappear. The conception of the world postulated by mathematical physics certainly works at one level. But it has lost all meaning for human life. Man cannot insert himself—his rich experience of life—into this network of formulæ. And because man *is* part of the universe, any conception of the universe into which he cannot be inserted must *ipso facto* be lacking in *wholeness*, and therefore be untrue.

In his way and in his age Coleridge already saw this. He was a philosopher as well as a poet, and he wanted to create a science based on the faculty of the Imagination. He saw that abstract scientific thinking contemplates the world as something outside the ego. It thinks about the world and does not experience it by uniting itself with it. Now it is true that *from one point of view* the ego and the world it contemplates are in opposition to each other, are different from each other. But life works in polarities, and the other pole is the *union* of the ego with the universe. Abstract thought knows only one pole and is therefore dead itself and only understands death. Imagination grasps both poles and is therefore living, and understands life. For just as God—the divine 'I am'—created man—the human 'I am'—as something both like Himself, a being able to speak the ineffable name of 'I', and yet at the same time different, so Imagination lives also in the polarity of sameness and difference. Hence an

essential mark of secondary Imagination in works of art is to unite opposites, 'Novelty with Tradition, the General with the Concrete, the Idea with the Image, the Natural with the Artificial, more than usual emotion with more than usual order'.

It is evident that if Coleridge had succeeded in founding a Natural Science on the faculty of Imagination, the idea of polarity would have played a very important part in it. It would also have been a science in which the Logos manifested itself in all realms of nature, Geology being the Logos in the earth, Biology the Logos in the plant, Zoology the Logos in the animal, Anthropology the Logos in man. But though Coleridge threw out some very interesting ideas, they were at the best fragments. He was notoriously lacking in system, and he had little of the quality of patient observation.

In this he appears in striking contrast to the contemporary he so much admired, Goethe. It almost seems that by a trick of fate, the English and the German character were reversed in these two men of genius. Germany, the home of introspection and philosophy, produced Goethe, who wrote:

"Mein Sohn, ich hab' es klug gemacht,
Ich habe niemals über denken gedacht".

—which may be translated:

"I tell you, son, I'm pretty clever,
About thinking I've thought—never".

England, the home of observation and experiment, produced Coleridge, who did little else but think about thinking! But while Coleridge was thinking about thinking, Goethe's imaginative eye was *seeing* the Archetypal Plant, in relation to which every plant is the same yet different, or maintaining that the single bone contained the wholeness in the part, so that the entire skeleton could be built up from it, or studying the polarity of light and darkness and the appearance of the living world of colour as their intermediate term.

The impulse given by Goethe in Germany and Coleridge in England—in such contrasting ways—to an imaginative interpretation of the universe did not find any immediate success. Human consciousness had to travel further from its own original instinctive picture-thinking into the dead world of mere number, measure and weight before a resurrection could take place into the new world of consciously—and therefore freely—created pictures, which is the world of Imagination. The work of Coleridge and Goethe and their contem-

pories marks the beginning of this resurrection. The work of Rudolf Steiner carries it very, very much further. Indeed Imagination as understood by the Romantics, even in its deepest sense, is only the threshold of Steiner's spiritual perception. But in every aspect of Steiner's work you will find the beginning is made by the conscious creation of pictures, whether in the process of self-development, or in the study of morphology in the kingdoms of nature.

It follows as a natural course that the educational work founded by Steiner is shot through with imaginative understanding and the understanding of Imagination. Indeed the child—being himself a part of that imaginative whole we call humanity—echoes in his development the course taken by human consciousness in history. He begins by seeing the world in terms of pictures. In his play the carpet becomes a sea, the chair a ship, the sofa an island. He lives in a world of changing scenes inhabited by characters of whom the adults around him often know little or nothing. He does not see the world around him in the stark matter-of-fact outlines which the modern adult sees. It is the task of a true education to foster and enrich this marvellous gift of Fancy in order that it may later be reborn as Imagination. Most forms of education set to work to destroy it by scientific explanations, which do not so much explain as explain away. They furnish the child with head knowledge, when he is craving for heart knowledge. When he asks for bread, they give him a stone.

Fantasy can be kept alive till the advent of puberty when intellectual thought is born. As it declines the keenness of perception for the world outside increases. For small children have not, for instance, acute visual perception. It is difficult to get them to see the distant ship in the ocean, or the bird hovering in the sky; nor do they perceive the 'hidden' thimble so palpably obvious to the adult. They see best what is in movement. The form and gesture of things suggest pictures to them. As the pictures of Fancy disappear, the objects of the world become more distinct. But, as Coleridge truly held, even the immediate pictures of sense-perception are acts of creation, not of passive receptivity. Therefore one of the tasks of a true education is to help the child's vision of the world to be as vivid and creative as possible. For this reason the first science lessons in a Rudolf Steiner school, which begin about the age of twelve, are observational in character. Theories come later.

The theories must indeed come. It is a necessary part of human experience, a necessary condition of human freedom, to detach oneself from the world and consider it abstractly. But this is only one half of the story, and a true education will also sow the seeds of imaginative thinking by which ultimately

the adult may regain in consciousness that union with the spiritual being of the world from which he fell in childhood. This is also attempted in a Steiner school. The world is interpreted morphologically rather than atomistically. The life-giving principle of polarity is again and again invoked. The exact eye of the scientist is enriched with the vision of the artist. The Fantasy of the young child is born again in the creative act of Imagination, which becomes an organ not for the inner life of man alone but for the understanding of the world.

It is here where the education founded by Rudolf Steiner stands in the very centre of one of the most acute problems of to-day—the relation of the Sciences with the Humanities. By its very definition modern Natural Science investigates a world outside man—moral and æsthetic considerations which form the core of his being have no place in the laboratory. The Humanities on the other hand (as their very name implies) are essentially concerned with human values. The two may be taught side by side, but they share no common language, and man remains in a divided world where his moral and æsthetic being cannot converse with his scientific knowledge. The dichotomy was clearly seen, and its solution prophetically envisaged, more than a hundred years ago by the American Ralph Waldo Emerson in his *Essay on Nature*, only that he uses the term naturalist where we would say natural scientist or simply scientist. A few of his more pregnant sentences will make a fitting end to this article.

“The reason why the world lacks unity, and lies broken and in heaps, is because man is disunited with himself. He cannot be a naturalist till he satisfies all the demands of the spirit. . . . There are innocent men who worship God after the tradition of their fathers, but their sense of duty has not yet extended to the use of all their faculties. And there are patient naturalists, but they freeze their subject under the wintry light of their understanding. But when a faithful thinker, resolute to detach every object from personal relations and see it in the light of thought, shall, at the same time, kindle science with the fire of the holiest affections, then will God go forth anew into the creation”.

Such a faithful thinker was Rudolf Steiner, and we owe it to his recovery of the wholeness of Imagination that we can show our children a world where God has gone forth again into the creation.

THE COMPREHENSIVE CURRICULUM WITH SPECIAL REFERENCE TO THE TEACHING OF LANGUAGE

THE human being has travelled far in evolution but the possibilities of further development are still infinite. He has to learn to know and to direct his forces and this is a task of education.

Rudolf Steiner speaks of the possibility of acquiring higher faculties by following a particular path of training. Such faculties open the way to higher knowledge and greater understanding but they can only be developed if the human being also seeks to perfect himself. The training is essentially self-education. It is by personal effort that the slumbering faculties can be awakened.

The child cannot undertake self-education. Until his essential individuality has properly incarnated he cannot be master of himself; neither, in the ordinary course of events, is he ready for higher knowledge. His first task is to find his way into the world, to learn both about the world outside and about himself. It is the task of the teacher to help in these processes. In the first place the teacher awakens the slumbering faculties and the child acquires knowledge and experience. Conversely knowledge and experience awaken faculties. How far each human being will progress is an individual matter but the possibilities are infinite. Kant was mistaken in speaking of the boundaries of knowledge. There is no objective limit of knowledge. The boundary of knowledge is the limit of understanding of the human being but the human mind is not finite, hence the extending boundary. There is always more to be learned.

Within the human being lie endless possibilities. If we consider the sum total of human achievement—discoveries, ideas, inventions—we have a staggering picture of the human potential. The ordinary mortal may well stand amazed at the multifarious results of human effort as manifested in the world; yet he lives in the world and must perforce come to terms with it. He can only do this by matching his own being with all that confronts him without. A many sided education is essential.

In the Bible we read of people being made whole. In education we can also think of man being made whole. Any one-sided development results in disharmony. For balanced judgment and action a person must be whole and must view the whole. In law all sides must be presented that justice may be done. How shall the human being do justice to himself, his fellow men and his creator if he has not a ‘wholesome’ outlook. A wholeness can only be brought

about if all faculties are developed and all faculties can only be developed if the education is all-embracing. Because a Rudolf Steiner education seeks to develop the whole man the curriculum is a comprehensive one.*

The Rudolf Steiner school curriculum is comprehensive in the actual matter presented to the children. It is comprehensive in that it not only sets out to give knowledge and develop intellectual capacities, but it considers the life of feeling and of will; it considers social, moral and religious aspects. In short, it educates the whole human being.

Let us first consider the actual matter, the subjects, the bones of the structure.

Arts, Sciences, Humanities, have an equal place. In fact this differentiation hardly occurs to a teacher in a Rudolf Steiner school who sees the world as a whole and the different subjects as a part of one whole. A bare list of subjects in the curriculum would include: English, Mathematics, Physics, Chemistry, French, German, Latin, History, Geography, Religion, Plant and Animal Study, Handwork, Handicrafts, Eurhythmy, Singing, Painting, Drawing, Modelling, Recorder Playing, Surveying, First Aid, Histories of Art, Poetry, Music, Architecture. But this does not give the whole scope. In addition, many lessons are given which are difficult to classify. When children are beginning to take more interest in the world in general at about the age of nine or ten, courses are given on practical work such as building houses, farming and gardening, mining or other of the practical trades. In later years pupils are introduced to the principles of the steam engine, the internal combustion engine, the telephone, wireless and more modern discoveries such as jet propulsion and nuclear power. That these things shall not be merely theoretical, many visits to factories, works and mines are arranged for the sixteen-year-olds. To broaden the outlook trips and exchanges abroad were features of the Rudolf Steiner schools long before they became so popular elsewhere.

This, however, is only an outline. It could be shown how each subject by itself is dealt with in a comprehensive fashion. Here we shall deal with the subject of language and speech.

Language is something fundamentally human. The mineral, plant and animal worlds may have their moments of sublimity but none of them have the power of expression of speech. Only the human being speaks.

* In case this phrase should be confused with the new style of comprehensive school it should be explained that in the comprehensive school different streams of learning are housed under one roof so that transfer from one to another is facilitated. It still means specialisation, which is also limitation. Comprehensive in our sense means that all children take all subjects.

Whoever wishes to teach in the way Rudolf Steiner intended has to begin with himself. In Dr. Steiner's educational works we find words to the effect that what a person is can be of more significance to the child than what he says. He speaks of the 'imponderables', that which is conveyed from teacher to child in an unconscious way. The thoughts of the teacher and the contents of his soul have a subconscious effect on the child.

At all times it is incumbent upon the teacher to prepare his lessons. But it is also important that the teacher should prepare himself in order to give his lessons.

Anyone who has to deal with the teaching of language in any form will wish to formulate certain ideas about the subject. A great deal is beyond the comprehension of children, particularly in the early years; it is therefore all the more necessary that the teacher should bear the thoughts and ideas within him.

A beginning might be made by pondering for a while on the opening words of St. John's Gospel: "In the beginning was the Word and the Word was with God and the Word was God". We find in the Bible that God said: "Let there be light and there was light". We read also of the Word which became flesh.

To penetrate into the full meaning of these quotations would require some intensive study of spiritual science. Let it suffice here to say that we are confronted with some sublime mystery in which speech is involved. In the realm of the more immediate one might ponder on the effectiveness of incantations or think of the cries chanted by our pagan forefathers as a means of inspiring fear in the enemy.

Language and speech, the ability to understand and express, are things which are required throughout life. They are cultivated within the school at all ages. In the first classes much is made of the spoken word. The teacher cultivates his own speaking both with regard to content, delivery and expression. The child is encouraged to speak clearly. The imitative faculty is still present. Stories are told and retold, poems are learned by heart and are recited individually and collectively; original oral compositions by the children are encouraged. A long process leads to the mastery of the art of handwriting. The letters of the alphabet are not presented as abstract symbols, but they are developed from pictures of something real. A feeling for form is fostered as well as a sense for the element of sound. Writing, which is the more active occupation, precedes reading, which follows in due course. No attempt is made

to make children read too early. It is an easier, quicker and more pleasant process when the forces are more mature.

A special feature of the Rudolf Steiner schools is that at the age of six the pupils are introduced to two foreign languages. In the early years all teaching is oral. Singing, acting, miming, all have their part, and it is a question of speaking and listening. The teacher does not and should not read to the children. Everything must be fresh and lively. The child has not yet reached the stage when he can understand the more formal side of language. This comes at the age of nine or ten when grammar can be introduced, first in connection with the mother-tongue, then in the foreign languages. This is the age when children begin to feel that their relationship with the rest of the world is changing. It is an age when they begin to look at things in a new light and to ask questions of a different nature. In the general pedagogy this development is supported by lessons dealing with practical activities such as farming and gardening and house-building. In the sphere of language it is the time to begin to look at the structure.

When learning grammar in the ordinary way the general impression that one receives is that grammar is something superimposed on the language. It is so often taught divorced from its human connections that it becomes dry, theoretical and uninteresting. This is avoided, however, if grammar is seen as an essential part of language which has developed out of the laws of the human being. We have only to look at the three main parts of speech to see the connection. The human being has a threefold nature. His activities manifest themselves in thinking, feeling, and willing. Out of a will element comes the verb, from the feeling the adjective, and from the thinking, which is contemplative and detached, comes the naming word, the noun.

As the child of about ten is establishing his relationship with the world the study of the preposition is of especial importance, because it shows the relationship of one thing with another, and thus mirrors the child's own experience at this age. Similarly in the course of growth children become more conscious of time. In early years children often ask, "Is it this morning or this afternoon?" or even, "Is it to-day or to-morrow?" When, however, time *means* something the occasion is at hand to learn the intricacies of the tenses. At a further stage the difference between direct and indirect speech must be grasped. Here is an exercise in objective expression.

Dr. Steiner was insistent that practical matters should never be neglected and we find it mentioned in the curriculum several times that business letters

must be practised. What is required is a clear, straightforward, concise statement with the observance of all the usual formalities. When science is being taken in class six and onwards the opportunity is also given to develop the faculty of making clear, objective statements.

From what has already been described it will be clear that the school work is built up to accord with the age of the child. It is not a question of making a plan in which certain stages of achievement must be reached at a certain time. It is a matter of considering the growing forces of the child and meeting these growing needs with the right nourishment.

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After the age of fourteen all teaching takes on a different character. The young men and women begin to use their own powers of perception and judgement. The intellect awakens. In every subject tremendous new fields open up. The content of what can be taught to adolescents with regard to language may perhaps be summarised as follows.

Our present languages have become very abstract in their use. When we use words, the mind immediately jumps to the concept. Words have become a means of expressing ideas and of communication, while the real picture out of which they were created has become lost. Very often there is a real concrete picture in a word. For example, 'capricious' means one who cannot make up his mind. The derivation shows it to come from the Latin 'capra', a goat. 'Capricious' therefore means 'goatlike', but the picture has been lost. 'Assiduous' means diligent, hard-working, but its real significance is 'sitting down' to a task. We have the same principle in names; 'dandelion' = dent du lion, the tooth of the lion. 'Leicester' = the camp on the Lea. 'Derivation' itself means 'down from the river'. Other examples lead into metaphysical fields. The word 'consider' means 'with the stars'. Such an expression can only be understood on the basis of the belief of the connection of the human being with the Cosmos. At night he enters and communes with the starry worlds. The word 'consider' therefore has the same effective meaning as 'sleeping on it'. 'Disaster' means 'out of harmony with the stars'. 'Conscience' is 'the knowledge with'. How shall one interpret the blank except by the Unnamed One? 'Atonement' becomes clear when split into its different parts, At/one/ment.

We can progress further however to the actual nature of sound itself. We use sounds as words, but what is the reality of the sound. Why is a rose

called a rose and not a lily? What is the connection between the object and the sounds by which it is represented.

If we follow Dr. Steiner's line of thought we understand that in ancient times the human being was more flexible and lived closer with nature in a world which had not solidified to the extent that it has done now. The human being expressed himself in movements as nature affected him. But with the growth of his individual nature his movements became more controlled. (Movement as an essential part of human expression can be seen in the tribal dances of primitive peoples, and even in the temple dances of the Greeks.) The original movement of the whole organism, however, became changed and the movement of the vocal chords remained. What was movement became sound.

The movements or sounds arose as the result of human experience; there is therefore in each sound some expression of a specific experience. We differentiate between two elements in speech, the vowels and the consonants. The vowel sound, which flows so freely, is the expression of man's inner nature—wonder, surprise, fear. The consonant on the other hand expresses something of the outer world. A few examples will illustrate the point. If we take a series of words beginning with 'B' we find a great many of them have some 'containing' quality. To the sound 'B' an enclosing element can be ascribed. In 'R' there is always some activity and words with 'R' illustrate this. 'F' is a different sort of activity, flee, flight, fire, fly. In 'L' there is a wonderful unfolding quality, life, leaf, light, love.

The survey can now include foreign languages and the words of the different languages can be explained as a difference in experience. In English we say 'tree' and have the experience of something upright and active. The German says 'Baum' and means the enclosing outline, the shape. The Frenchman says 'arbre', that is, a form sandwiched between activity. Look at 'life', 'Leben' and 'vie' from this aspect. Life is an unfolding and an activity; Leben is an unfolding but a closing-in again; vie is a little wave.

There is thus in the teaching of foreign languages more than a utilitarian aspect. In each language a different perception of the world is manifest. Words are different because of different experiences. Other aspects of evolution can also be learned by studying languages, e.g. the absence of a personal pronoun in pre-Christian languages and its later development point to a change taking place in individual consciousness. Whereas formerly the human being was a member of a group later he becomes an individual. The formation of the future tenses in English, German and French make an interesting study. In English

'I will' denotes a willing activity, in German 'ich werde' is in the sense of becoming and is perhaps a true future; in French 'ai' attached to the infinitive gives the sense of 'I have to', i.e. there is some compulsion.

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Many routine matters, i.e. spelling, punctuation, style, which belong to the learning of language, have not been mentioned. They may be taken as obvious. Neither have we entered the field of literature in which an equally comprehensive survey could be given. It may be justified to mention just one aspect of this subject here, the difference between poetic and prosaic language. One of the main differences is the use of imagery. Figures of Speech are a great means of enhancing normal expressions. The best place in the curriculum to introduce them is when children are about fifteen. In studying these and in particular the simile and metaphor, the most interesting discoveries can be made with regard to the working of the human mind.

Mention should also be made of the introduction of Latin and sometimes Greek in the fifth or sixth class. The languages reflect their civilizations. One has only to look at Latin to appreciate the Romans' love of law and order.

So far we have tried to show the comprehensive way in which a subject is taught; but to comprehensiveness belong other features. The aim of a development of a whole personality was mentioned earlier and the necessity for balance in the thinking, feeling and willing forces. At a certain age one or other of these is predominant and this fact is taken care of in the general lay-out of the curriculum. But obviously the three faculties are present all the time and due regard must be given to them in each lesson.

With languages it is the mixture of activity which brings all three forces into play. Usually learning a language is a purely intellectual pursuit. It is a head activity. In the Rudolf Steiner schools this is not so. Rhythmic recitation, acting, painting, drawing, modelling, the practice of Eurhythmics draw the teaching into all parts of the human organism. Let us also include the enthusiasm of the teacher whose activity and initiative are not circumscribed by outside authority.

Social, moral and religious impulses were also mentioned.

Speaking is obviously a social activity. How easy it is to say the wrong thing, and be classed as anti-social. How difficult it is sometimes to make a contact. Speech is the great means by which human beings communicate with one another. The cultivation of good, correct speech is a social necessity. To

learn one's own language properly and other languages is a social act in order to understand the other person. The study of language is therefore a social education.

One could ally morality very closely with correct speaking and proper understanding. Clear speaking demands clear thinking. Incomplete statements and half truths show a lack of moral sense. Thoughts are clothed in words and to practise right thoughts and right speaking is a moral education.

Religion can enter every subject. When the human soul is filled with awe, wonder, or devotion, a religious impulse is born. In the field of language there is much that is mysterious; there is much that can call forth feelings of wonder and awe. Knowledge of language leads to knowledge of man. Knowledge of man leads to knowledge of the Universe, a divine creation. The study of languages therefore is a religious education.

Although there can obviously be no finality, the comprehensive curriculum and the comprehensive way in which each subject is taken present the picture of one world illuminated from many sides. As each aspect is considered a different part of the human being is engaged. A sense of wholeness is thus developed.

The wide experience and the extensive awakening of faculties give the growing human being a feeling of inner wealth. He is able to sense his own potential. In spite of having travelled far he knows that there are new worlds to conquer, but he also knows that he has a power within.

THE SCHOOL IN SOCIETY

by

G. L. ROWE. B.SC.(ECON.)

THE effect of school-education on the pattern of a modern society is so vast and manifold, and withal so subtle and secret, that we need to think about it hard and often. The purpose of the present article is to bring together some leading thoughts that have arisen from experience both of teaching and of school-administration.

We need to consider, as regards the social impact of school-education, both what it can and what it cannot be expected to contribute; and, as regards administration, in what way the community could best be organised to supply such education. The first question is much in our minds at present, coming up most readily in connection with juvenile delinquency; the second, in the uneasy relationship in this country between state and independent schools.

I. THE TEACHING

It is becoming quite a common thing for magistrates and welfare-workers to turn to the teachers as a body and to suggest with some emphasis that it is up to the schools to turn out decent young citizens. The teacher is very liable to reply that there is a strict limit to what can be done in this direction by school-education, as set against the influence of the home background: to some extent he is backed up by the psychologist with knowledge of the profound formative influences that have already had decisive effects in the pre-school years. Even academic ability is now well understood to be largely inborn: our I.Q.s and 11+ tests and suchlike may be far from perfect in application, but they reinforce the practical experience of the teacher, that he has not much to do with making the child clever or the reverse. True, from time to time, he has the experience of seeing a much-retarded child come through suddenly to improved performance; but in such cases one has always the strong impression that what has happened is not the creation of ability, but the removal of some emotional stoppage. It may well be asked, then, has the teacher any task beyond that of a skilled imparter of information? Have our training colleges any task beyond that of acquainting the teacher with the best means of filling heads with useful, reproducible knowledge?

There is no doubt actually that the teacher—and the school-structure within which he works—do mean a great deal more than this in the child's life

and later development. Nowadays a very important proportion of the child's waking life is spent in the dominating presence of teachers. It is difficult for adults to remember, or realise, how much one hour means to a child, how new every experience is, how deep it strikes. Gradually through the years that glowing immediacy of experience fades: but for the young child especially what has just happened in the hour that has passed works every time with strong formative power. Up to seven, it has worked into the very limbs and organs; for the next seven years at least it is the child's emotional experience of life that is shaping his future emotional capacities. If long schoolroom hours of a child's life are emotionally sterile, the tendency will be for the feeling-life to become dull, immobile and apathetic. It is not impossible for this to occur parallel with a bright intellectual development: this, indeed, may be quite commonly observed in the readiness of clever children, in conversation, to turn out strings of verbal witticisms, and to laugh often, with eyes that do not smile at all.

While at school the clever children taught with sterilised intellectualism are saved by their ability to rise to the plane of intellectual enjoyment, to thrill with intellectual achievement. The dull ones have no such outlet; they are fundamentally bored; unless they are utterly phlegmatic, they resent the pattern of life that has left them starved. In certain social backgrounds, they manifest their educational disorder quite definitely when, in adolescent years, their malformed souls reach out for union with the world. "What's Brain? Give me Muscle every time!" proclaims the teddy-boy's violence. "What's Brain? A Man must have Colour and Shape!" is the educational truth of the teddy-boy's clothes. "What's Brain? We're as good as you because we Are, we Exist, we Move!" sounds from the lowering cloud on the street-corner. It is utterly essential, first, that children's emotional capacity shall be formed and fed with the greatest care in the middle years; and that in adolescence it shall then be helped to unite itself with idealistic vigour with all that ought to be significant in modern culture.

To limit the education of the unacademic child is a very natural step if education is to be brain-manufacture. Since, however, education has a profound influence upon souls, it is a social blunder with disastrous results. Plain boredom is not classified as mental illness, yet the amount of anti-social conduct that can be seen to arise from just plain boredom can hardly be exaggerated. It is a grimly dangerous state of mind, if it becomes persistent. It is a state of unbalance which craves change and becomes progressively less scrupulous about the nature of such change. Probably it is the greatest single factor

that makes possible the enlistment of whole populations in a war-effort. If and when we get whole populations for whom their constructive living is vital and real, war will become unthinkable.

The whole system of 'streaming' children according to intellect is social madness. A strange irony, indeed, that socialists revolting against ancient privilege should have reacted to the support of educational measures which will lead to the creation of class-distinctions more rigid than anything the feudal system ever conceived. Thousands of clever young people are growing up who have never known the company of all those other young people whose outlook on life has nothing to do with cleverness. Even more thousands of young people are growing up, not clever at all, to whom the lives of the clever ones are a mystery that functions on another plane altogether. The remoteness of "them up at the Big House" was nothing to this, because in earlier times child-life was never so canalised through the long hours of the day. What really makes class-distinctions is difference of interests, and the present device of streaming the whole population into schools which offer widely different educational experiences is already on the way to producing widely different cultural layers. Moreover, the dull ones are conscious of being undervalued all through their childhood, there is resentment in all of them, and the new classes will have class-feeling ready-made in them. So far, perhaps, it shows most clearly, not so much as resentment but as a conspicuous lack of any sense of social obligation. It shows in crime, too. No one can nowadays be driven to theft by near-starvation; the causes of theft are changing somewhat; it is common to find burglaries carried out with deliberate destruction and defilement—the attitude of social resentment.

It is no use introducing 'Civics' as a school-subject. There is, however, a way of enabling the children actually to experience world-community, and that is by eschewing streaming altogether and keeping them in their age-groups. If one has experienced the lives of class after class brought up by this method, the social lesson is utterly convincing. Thus they share the experience of growing-up as it appeals to their stage of human development, to the universal humanity which will be their only common attribute as citizens later on. In such a school life, it is bred into their very bones that it takes all sorts to make a world—that Bill is cleverer, or stupider, than you are, but you know just how he feels, and that he needs just as much room and warmth and politeness and friendliness as you do. Also that he is very different, and you simply take it for granted that he is so, and has a right to be.

The need for richness and formative power in lessons has now been mentioned several times without explanation. Partly it is a matter of subjects; the curriculum must be kept wide as long as possible. For the purpose of producing good citizens, it is more vitally necessary for a 'dull' boy or girl, whose employment will probably be unsatisfying, to have wide cultural interests, than it is for one who will following a many-sided profession. Truly, it is more important for a dustman to have access to Bach and Michael Angelo, as well as to jazz and the cinema, than it is for a doctor.

A vast change will indeed have to take place before such an idea can find wide acceptance! Even in schools that are willing to provide such a curriculum, parents of such children are seldom happy to keep them at school to the age at which such teaching bears fruit. Partly they are moved by the rational consideration that a child who stays too late may be past the right age for apprenticeship; partly they succumb to the accepted idea that culture is only for the clever. In this they are supported by the authorities in the teaching profession, who are mostly convinced that culture for the dull is impossible. It is indeed—if you 'teach' Beethoven and Fra Angelico, Cezanne and Christopher Fry in such a way that your main object is to train the class to regurgitate on to examination papers accepted judgments about artistic forms and schools and influences. If, however, your essential object is to ensure that the children grow up in a milieu in which the arts are as essentially part of life as are transport and business and the post office—that nothing human shall be alien from them—you will have a measure of success.

II. THE TEACHERS

It has been generally implied in the first part of this article that modern teaching tends to have the quality of sterile intellectualism. Some reasons for this generalisation may now be reviewed.

Since school-attendance became compulsory in the United Kingdom in 1876 there has been time for a teaching profession to grow up, tackling a task unprecedented in social history, with a recognisable philosophy of its own. The public elementary schools established in 1870 were instituted in order to provide education free of any religious element; popular education, which quantitatively determines the tone of our society, grew up in the stimulating atmosphere of the Evolution controversies; and for most of the past eighty years the advance of thinking along the lines essential for achievement in the physical sciences has seemed, most triumphantly, to be the keynote of our civilisation. The glorious

intellectual discipline of exact proof, the scientist's objective detachment, these qualities have not only manifested themselves as veritable transformers of the world, but have seemed to be capable of solving, in time, every human problem.

The typical teacher (some generalisations must be risked) is a man or woman devoted to objective truth. He wishes to impart to the children truth as it is, free in particular from any bias of his own. He is non-sectarian, if he has any religion at all; he is eclectic, eager above all to seek out the best original studies, to assemble the substance of his lessons from what he judges to be most certainly established. The essence of his culture is to be free of tradition, and to free the children from any reliance upon dogma. Yet in his actual presence before the children, he continually preaches the gospel he has woven out of the thought-patterns of his time. It proclaims: "Nothing that is not proven by deduction and induction is of any significance. Art, religion and morals are of a lower order of reality than molecular relationships. Subjective experience is always suspect. Things are not good or bad, but always a mixture of both". These things the teacher does not say; but they are taught in every minute of every subject; they are outlined in the gaps left by all that he leaves out. The children who can conform with such a philosophy harden quietly within themselves, without fuss; the more able of the rebels go forth to seek, unguided, in life something that will answer their vivid inner experiences; the dullards blunder into contriving for themselves a sub- or anti-culture founded on collective visceral sensations and the denying of intelligence.

What is food for undergraduates is poison for children in the middle period of school life. The only way of building up strength of soul in the pre-adolescent child is to surround him with adults (including parents) whose inner enthusiasm for the significance of beauty and morality, of joy and sorrow, of veneration and of laughter, is precisely equal in intensity to their enthusiasm for accuracy and truth. Rudolf Steiner once stated it drastically by saying that every lesson should bring the children both to laughter and to the verge of tears. What this means in practice is that in every lesson the teacher must be sensitively aware of the emotional impact, as well as of the intellectual contribution, of everything he says or shows. Every experienced teacher knows that subtle changes in character and behaviour take place with remarkable swiftness and frequency in young children. If the teacher is suitably trained, if it is his constant endeavour to support or to modify these changes with the same vigilance that he must apply to the correction of thinking, then he will find his way to the shaping of souls as well as to the sharpening of minds.

Though he does not need small classes for this—there is a Rudolf Steiner technique of grouping by types—he certainly needs time. The universities are now doing serious damage to child-education by a raising of entrance-standards which forces pre-training for degree courses back into the school life. Is it too much to ask the universities to accept young people who know less, in the well-founded hope that they will be found capable, through greater vitality of intellect, of learning all the more in the university years?

The intention to shape souls implies that the teacher carries about with him a pattern of the ideal child. This, of course, is nothing new. The old educators had it in their ideal of 'good form', the old school tie and so on. The difference for to-day must be that the teacher is sensitively on the look out for the emergence of infinite variety; he is there to clear away the distortions in the emerging personality; and at the same time, with firm authority he is presenting social behaviour. This can happen only if the teacher has himself a philosophy of life; the teacher whom we remember clearly and warmly from our own early lives was always such a person.

Fluidity, mobility of perception and experience; firm authority for conduct: these are ideals for which a special structure still needs to be created. The teachers in every school must be free to apply very various techniques of character-formation—which includes, and does not compete with, the shaping of well-informed, accurate thought. A broadly-defined agreement on curriculum, on the standards of knowledge to be reached by the end of the course—this does not limit such freedom; but the prescribing of methods by officials outside the school is deadly. For one thing, such officials have no genuine means of acquiring a pedagogical ability superior to that of the teachers they supervise: the basic reason for their existence is a political one, the traditional structure of hierarchical control. Likewise, within the school, the headmastership is a medieval survival; his real efficiency depends solely on his pedagogical insight into the children his decisions affect, and can be exercised without any assumption of special authority; while his administrative activity is of such a nature that the parts of it which are really useful could be carried out by a secretary responsible to the teachers as a body. There can be no doubt that a very important reason for the scarcity of recruits for teaching is a modern distaste for being ordered about by figures endowed with an authority unjustified by function. (As a social phenomenon, it is closely paralleled by the decay of domestic service! The work is still there to be done, but the figure of the 'master' or 'mistress' is no longer a credible focus for loyalty.)

On first acquaintance, the idea that a school can be governed by a council of its teachers equality appears startling. But anyone who has spent, say, five years working in such a council, where all are intensely aware that none can escape responsibility for the conduct of affairs, knows that a modern social form can thereby be created of intense usefulness for other spiritual institutions besides schools. In any case, Rudolf Steiner schools of over a thousand pupils have been managed in this way since 1925.

Within the limits of the space, a certain thesis has been argued up to this point. Let us now conclude with a practical suggestion, unsupported by fresh arguments. Suppose we pass an Act of one paragraph, which will ensure to all schools within the national structure a continued provision of money and equipment as at present, but which abolishes every supervisory control (Ministry, inspectorates, education committees)—making every school an independent school? Where would we go from there? Through chaos, maybe, into true creation.

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