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# Child and Man

CHRISTMAS 1954



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# CHILD AND MAN

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CHILD AND MAN is a magazine for the education founded by Rudolf Steiner. It seeks to form a link with all those who are interested in this education, on the basis of an up-to-date and authoritative commentary on the development of the work in the schools.

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The Editor regrets that the article by Dr. Georg Unger announced for this number is unavoidably held over. It will appear in the Easter number.



## Old Age and Youth

A month or so ago a well known Swiss doctor, Dr. Gerhardt Schmidt, gave a lecture in England on the problem of growing old. One of the things he said was that the appearance of premature symptoms of old age, such as sclerotic, rheumatic and arthritic conditions in middle life or even earlier was partly traceable to the kind of education one had had as a child. An education that was preeminently intellectual, such as teaching the child to read and write at an early age, encouraging him to commit facts and definitions to memory, explaining the phenomena of science and history on the basis of cause and effect, preconditioned the child in his soul for what would appear later as the symptoms of these diseases. An education however, based on an imaginative and artistic approach, would help him to retain forces that could hold at bay the hardening tendencies of later life.

In a less materialistic age than ours such an observation might receive far more attention than it is likely to do today, and there might also be a more widespread attempt to find and apply the remedy. But even allowing for this it is surprising that we have overlooked the fact that the increase in premature sclerotic conditions during the last hundred years has coincided with the rise and growth of universal education. Is this just a coincidence, or is there, as Dr. Schmidt avers, a real connection between the two? We believe that there is such a connection, and one as well-founded as that between the increase in the number of motordriven vehicles on the roads during the last fifty years and the number of people who are knocked down. That not all people who have had a predominantly intellectual education have become the victims of sclerosis, no more invalidates Dr. Schmidt's statement, than that most of us have still escaped mutilation and death on the roads. Other factors, thank heaven, still intervene to preserve us from the worst consequences of both. But let the possibility be once admitted that man has a soul just as real as his body, that the two act and react on each other continually, and the one connection becomes as clear as the other.

The intellect denotes something hard, precise, well-defined, crystal-clear, and just because of this, of course, it is essential in some spheres of activity. We frequently speak of the 'cold', 'dry', intellect, and those terms are not figures of speech. They point to soul-effects that we undoubtedly feel, as anyone may test for himself by comparing the effect made on him by a work of art and, say the botanical classification of plants. How much more so then must the young child feel these effects, whose intellect is by no means as mature as ours, but whose qualities of warmth, interest and enthusiasm in all that lives and moves are perhaps greater. How much more will those soul effects condition the physical forces he will have at his disposal in later life when that surplus of physical energy and vitality which

is given him by nature has consumed itself in the process of growth. Then he will be left with what he has been able to transform from all that he has received by way of education.

Moreover, there is another point. Few people find it easy from middle life onwards to change their views, to consider new opinions and to reconsider the old. Even if we have escaped certain hardening tendencies in our bodies, we shall be fortunate indeed if we have not hardened inwardly. But it is all part and parcel of the same problem. Age is a drying up, a hardening of the bodily functions leading to that final immobility by which the soul releases itself from that instrument which will no longer vibrate to its touch. But we are hardening prematurely today. Senility is no longer only a process of nature. It is a disease encroaching upon the fullness of life itself. The wonders of modern medical research may find remedies to avert or postpone the symptoms, and induce a temporary animation. But the problem remains fundamentally one of the soul, and education, which is a soul process, must co-operate in its solution. Our age, we believe, needs the remedy of an education inspired by a spiritual understanding of man, which seeks to nourish by the power of imagination and of art the forces of the soul that they may in turn stimulate and fortify the processes of the body. If age is a problem, then youth is its solution; and the nourishing or burdening of those youth forces in our schools today will determine the enrichment or impoverishment of the physical forces later.

THE EDITOR.

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### 38th CONFERENCE OF EDUCATIONAL ASSOCIATIONS

The above conference will be held at University College, Gower Street, London, W.C.1. Dec. 29, 1954 to Jan. 3, 1955.

On Thursday, December 30th at 10-30 a.m. Mr. Hans Gebert, B.Sc. (Michael Hall) will lecture on

### THE COMPREHENSIVE SCHOOL IN THE LIGHT OF RUDOLF STEINER EDUCATION

*Chairman* : MISS M. BOWRON, B.A. (LOND.)

On Friday, December 31st at 10-30 a.m. Mr. Alan Howard (Michael House) will lecture on

### IMAGINATION IN EDUCATIONAL THEORY AND PRACTICE

*Chairman* : THE VEN. A. P. SHEPHERD, D.D.

## The Teaching of Mathematics

(continued)

Hans Gebert

LET us now turn to a more detailed study of the curriculum. From what has been said in the last issue it follows that the subject matter presented to the child and the way in which it is imparted must always be in step with the process of incarnation. It has already been mentioned that full incarnation into the body and adaptation to the life in human society takes twenty-one years. Even a superficial observation shows that this period is divided into three parts of about seven years each.

During the first seven years the physical body as an instrument for the soul and spirit is brought to a certain perfection. At first the organism must be adapted to its surroundings; the digestion must develop to deal with earthly food, the limbs must be shaped so that the body can obtain its upright posture in balance with the mechanical forces surrounding it. Next the organs of speech must become an instrument for expression of soul and spirit. Finally, the brain must be perfected as a tool for human thought.

When a scientist or an engineer builds an instrument or a machine he must first have a clear idea of the functions which it will have. He will then have to summon all his knowledge of the properties of materials and of natural law so that he can combine them in such a way that the instrument will finally work as it is intended to do. In the process of construction unexpected difficulties will often be encountered. Further research may be necessary to gain additional knowledge and in the light of new experience the original design may often have to be adapted until the final form of the instrument or the machine emerges.

Anybody who has watched a child in its earliest years trying to walk and then learning to speak and to find concepts and connections between them cannot but realise that a similar process is at work to the one described above. Many attempts must be made and the method of approach must be modified frequently before, for instance, the goal of walking erect is attained: What is the agency that is at work in this process? A glance into the future life of the developing child will help in finding an answer. The intellect of the man or woman once developed will be able to understand and to bring to consciousness many of the laws which were encountered and used in that early stage of development. The intelligence will be able to grasp the laws of mechanics, it will be able to gain some understanding of the chemistry of digestion, it will be able to think about the structure of language and of logic. Is it not likely in view of this that the agent is the incarnating individuality itself? In the process

of fashioning its instrument it learns what it can bring to consciousness when its forces are no longer fully engaged in its first arduous and important task.

There is, of course, one great difference between the activity of the scientist in building an instrument and that of the incarnating individuality in fashioning its body. The former proceeds from consciousness and the latter is an entirely unconscious activity. This illustrates a law which it is most important for the teacher always to have uppermost in his mind: in child development, doing and experiencing comes before knowing. Perhaps it is not without significance that we read in Genesis that God created the world in six days and that only after he had finished he looked at it and "saw that it was good". In the first instance, knowing is inimical to doing. One can frequently observe how one becomes confused in an operation of which one is master, when one has to carry it out while at the same time explaining it to someone else. Shakespeare realised this when he put the following words into the mouth of Hamlet:

"Thus conscience doth make cowards of us all,

"And thus the native hue of resolution

"Is sicklied o'er with the pale cast of thought".

If formal instruction is therefore started too early, the incarnating spirit is disturbed and this may lead to weaknesses in the organism and to illness in later life. A sign that the body-building process is complete is the onset of the change of teeth.

Although the mathematics teacher must not start to work with the child during this first seven-year period it is nevertheless a most important time for him. The child is then engaged in practical Mathematics. The human body is permeated by arithmetical and geometrical laws. Its forms and proportions, the rhythm of breathing and the heart beat are all governed by them. When learning to walk the child has an immediate and very practical experience of the laws of mechanics. The mathematics teacher will therefore always have to bear in mind that he has to build on that experience. It will be his task to bring to consciousness a knowledge which is there subconsciously rather than to implant something strange and unknown. The difference between a bright and a dull child lies in the ease with which that knowledge can be lifted into consciousness.

An attempt has been made above, as it was in the last article, to present some thoughts which may help to make statements about the nature of man and about the course of the incarnating process seem plausible. Conviction as to their truth will, however, only grow when they are treated as working hypotheses, like other scientific theories, and when deductions made on the assumption that they are true have been found to work in practice. What has been outlined above is eminently suitable to give indications about the way in which the first steps in Mathematics teaching should be made. We shall find that some principles will emerge which are already well known to be correct, but also others which may perhaps be new to some

readers, but which have stood the test of experience in Rudolf Steiner Schools for many years.

We all experience what it is like to lift something into consciousness out of the subconscious regions of the mind when we try to remember something which has been forgotten. Logic is of no use at such times. It is much more profitable to cast around for other information and other experiences which are likely to be connected with what we want to remember. If what has been said above is correct the subconscious mathematical activity was connected with the body and it should therefore be easiest to start in counting and in arithmetic as well as in Geometry from that readily available object. Counting should start with the fingers and the toes, go on to the children in the class and then only to other objects. Geometry can at this early age be prepared by starting to bring into consciousness the experience of symmetry given by our body, by moving in geometrical forms and by letting the class stand in geometrical shapes. Insisting on as perfect a circle as possible before a game can start should be a help in geometry teaching much later on in the school. In Rudolf Steiner Schools conscious drawing of straight and curved lines starts almost on the first school day and very soon the teacher will start to draw incomplete figures on the board which the children have to finish by using their sense of symmetry.

In the first steps in Arithmetic teaching it is particularly important to be sensitive to the way in which thinking about numbers arises naturally in the mind. Failure to do so blocks the way to the subconscious regions of the child. We do not say for instance: "Here is one finger, here a second, third . . . fifth, Aha! This is one hand!" But we say: "Here is a man, he has fingers, how many are there?" Not even when we are picking plums do we usually count them into the basket. We fill the basket first and then we might ask ourselves how many we have. We must thus always be careful to start from the whole and to proceed to the parts, at least when we first introduce a new kind of problem. When we introduce addition we shall therefore present the child with a heap of beans. "How many are there?" "Twenty-eight". "Let us make four separate heaps". "How many beans are there in each?" "Ten, eight, three, seven. So ten and eight and three and seven make twenty-eight".

The names which are usually given to problems like addition sum, multiplication sum, etc. are also already rather abstract. Here are, two problems, for instance:

1. I have ten apples; I give three to Johnny, how many have I left?

2. I have ten apples; I need seven to divide among my family how many can I give to Johnny?

The elementary experience of the child when presented with the two problems will be quite different and premature drilling to call them both subtraction sums is likely to lead to confusion. Even if the drilling process gives apparently quicker results it is

probably worth while to give our pupils ample practice in moving in the number realm, even in that of quite large numbers, and letting them do problems all possible ways round before proceeding to produce more abstract ideas. In the writer's opinion much of the difficulty experienced by children in Mathematics later on is due to fear. This can arise easily if the child is forced to make abstractions before he has experienced their justification. He then becomes uncertain, feels that he has no criterion as to what is a justified process and what is not, and uncertainty is the father of fear.

The practice of going from the whole to the part is also likely to pay handsomely much later on when the higher levels of the subject are reached. The pupil should then find it easy to grasp algebraic expressions as a whole and he should not find it unnatural that numbers and functions can be expressed as infinite series.

Our original assumption about the practical mathematics which has been done by the child before he comes to school also gives us guidance about the treatment of dull children. Remembering that we are trying to bring to consciousness something hidden in the organism, we shall not only give such children extra sums. We shall also let them make movement in connection with numbers. For instance: "Forward: Step, one; clap two, step, three; clap, four; step, five; stop. Backwards: four steps, five claps . . . etc". Or we shall let them walk to a pronounced rhythm and let them count the beats. We may even teach them to knit and after they have attained some proficiency make them do patterns requiring a lot of counting. In the first instance, such work will of course be done with all children, since number must be liberated from the organism for all of them.

We have now already entered the second seven-year period of the child's life. Quite superficial observation shows that children in that age group have still quite a different mental make-up from adults. Above all, they live very much more strongly in their emotions. Violent likes and dislikes are the order of the day, ardent friendships terminate with the same abruptness with which they began. Reasons, even those which seem very sound to us, have only very little influence on the children's actions; they will do things out of the love for a respected adult or because their enthusiasm has been aroused. This presents the educator with many difficulties but it also gives him the chance to educate and to harmonise the child's feeling life. A refined life of feeling is the best basis for moral and aesthetic judgment in later life, and if the opportunity to develop this has been missed in the elementary school the problems arising at puberty and afterwards will be much more difficult to meet than they need be. Just as the use of the latent intellectual forces during the first seven years may lead to illness later on, too strong an appeal to the intellect in the second seven years disturbs the development of the emotional life and is apt to produce adults uncertain in their judgments.

The writer does not want to imply that it is impossible to work intellectually with a child between seven and 14, or even that there are no children who can thoroughly enjoy such work. Most children however, do not live naturally in their intellect until puberty. A premature awakening of the intellect, although possible, shortens the period in which the child lives in his emotions and therefore reduces the teacher's chance to educate the feelings. It should become an educational principle to work with those forces which are naturally at the child's disposal. At the age in question these are: a capacity for experiencing strong feelings, for working out of love for a respected person, and a very lively imagination. The last can be seen at work in most of the games which children invent themselves.

Full intellectual understanding of Mathematics and appreciation all logical connections and chains of argument should not be expected until the third seven-year period. Such understanding will, however, not be possible unless a firm foundation has been made between seven and fourteen. On the one hand the fundamental concepts will have to be built up, the child should have no doubt what a fraction, a decimal, a prime number, a factor, an area or a volume is. These concepts need not be built up through definitions, which would be entirely abstract and intellectual, but the child's faculty of pictorial imagination must be used as will be shown in an example later on. On the other hand, the child will have to be master of fundamental techniques which will have to be his tools in the third seven-year period. He should be able to deal with fractions and decimals and should also be able to perform simple algebraic operations. Provided he has once followed the teacher's explanations of the process when this was first introduced, continuous awareness of why the process works need not and should not be insisted upon. At this age the child will not find practising a process at all tedious if the examples are so chosen that he can get most of them right. The more often a child can experience the joy of achievement after a hard struggle to master a new process, the better. Acquisition of knowledge itself also need not be an intellectual process. Many facts in Geometry can be made visually obvious by using appropriate figures or patterns, or by paper folding. The pupils should really enter the last seven-year period armed with the knowledge of the elementary properties of triangles, quadrilaterals and circles. Whenever possible exercises should be chosen which illustrate principles the child will only learn to know later on. Some examples will be given later.

It is, of course, most important that the teacher should always bear in mind that the processes which he teaches between seven and fourteen will have to be understood later on. Here the form of words with which the child learns to accompany the process is most important. When solving equations it is a great temptation to speak about "bringing to the other side" and "cross multiplying". Neither of these expressions refer to possible mathematical operations, and experience teaches that they lead to confusion. When dealing with

equations we can only "add to both sides", "subtract from both sides", "multiply both sides", etc. It is even worth while considering whether such a well established term as "cancelling" for reducing a fraction to its lowest terms is not better replaced by a phrase which does indicate the mathematical process really involved like "dividing numerator and denominator by a common factor". This may avoid mistakes like:-

$$\frac{\frac{1}{8} + \frac{1}{4}}{\frac{24}{8}} = \frac{1}{2}$$

After these general considerations a few words must be said about the distribution of the subject matter in the period under discussion. The introductory work on number which has already been mentioned should be done very thoroughly. It is probably not a waste of time of time in the long run to spread this over two years and only to come to formal setting out of sums in columns of units, tens etc. in the third year. The tables must of course be learnt as soon as multiplication has been introduced and simple sums involving weights and measures are not out of place; they may in fact introduce "carrying" and "borrowing" better than the work with units, tens, hundreds. This should be followed by introducing fundamental concepts like odd and even number, prime number, etc., and then by work with fractions and decimals in the next two years. During the last three years of this period the child has a particularly strong interest in the world around him. He is particularly keen on collecting facts. According to his particular bent he will want to know the capitals of all the countries, the authors of famous plays and books, the holders of world records in sport. He is also interested in how things work and how they are done. These interests should be used in collecting facts about geometrical figures for instance. The mensuration of simple plane and solid figures can easily be linked up with practical problems and so can percentages, interest, currency conversion etc. During these three years the intellectual forces proper do already start to make their first appearance and the first steps in the more abstract subject of algebra can therefore be made. All the work indicated above gives ample opportunity to make the usefulness of formulae apparent and Algebra can be started in that way. The power of imagination is still present but the awakening of the intellect makes it possible for the child to use it more consciously. This is therefore also the time to start the training of spatial imagination. Drawing simple figures in perspective and constructing shadows are good exercises and not too difficult ones. It is also good to draw simple interpenetrations, for instance, a chimney emerging from a roof. Simple plan and elevation drawings also train the spatial imagination and can be linked up with practical problems.

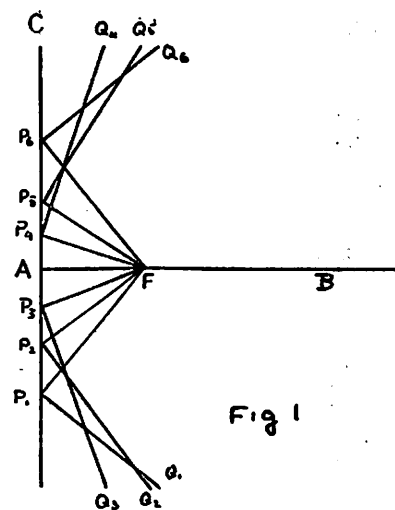
It may help the reader if a few examples are now given to illustrate the principles mentioned above. At first an example of the way in which a new concept could be introduced and developed: let us

choose the concept of prime number. A farmer's wife reckons to make some extra money by selling day-old chicks. She is however very methodical and waits until she gets a definite order. She then takes the number of eggs she needs and distributes them under her broody hens. In addition she is meticulously fair and sees to it that the hens working on one order all have the same number of eggs to hatch. One day she has six broody hens. Suppose she gets an order for 18 chicks, how many eggs will she have to put under each hen? The answer is 3. Suppose the order had been for 15 chicks, what would she have done? She could have detailed off 3 of her hens for that order and given each one 5 eggs to hatch, or she could have used 5 of her broody hens and given each one 3 eggs. What would she do however if she had an order for 17 chicks? She can do one of three things: she must either break with her principles and be unfair or she must try to persuade her customer to change his mind about the number of chicks he wants, or failing this, she must refuse the order. We can go on to ask how many hens she would have needed to be able to fulfil the order without violating her principles. The answer is, of course, "at least 17".

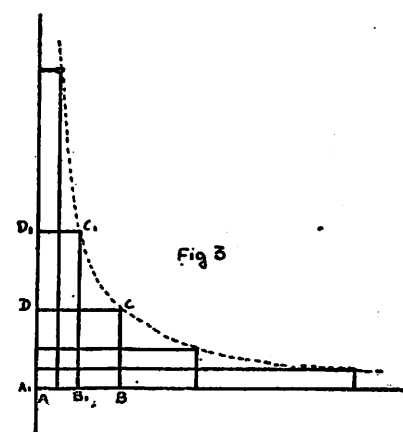
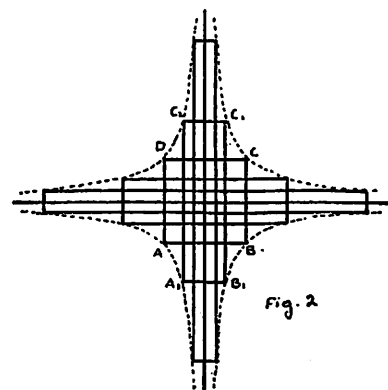
More instances will, of course, be given than mentioned above, all of which are good Arithmetic revision. The next question could be: "Are there any other numbers of chicks so that at least that number of hens are necessary to cope with the order?" Other such numbers will probably be found by the brighter pupils. Next we shall try to discover a test by which we can recognise such numbers and we come to the conclusion that it must be impossible to find a number of hens which "goes into" that number exactly. Now we have already the essential property of a prime number, namely that it cannot be divided exactly by any number except itself and 1. After this the children will enjoy looking for all the primes less than 100 and some may want to go further. A number of pupils may sense that there is more hidden in that table of primes than meets the eye. Some may even discover that there are occasionally twins in the table: two consecutive odd numbers like 29, 31. At such a point it is not out of place to mention some of the problems connected with primes pointing out to the children that they will have to become older before they can understand them. Such a statement rouses the children's expectation and will help the teacher who has to come back to the problem later on. In this case it is, of course, particularly interesting for the children to learn that some of the problems are still baffling the best mathematicians. The opportunity should never be missed to rouse feelings of awe and wonder.

Once the concept has been introduced we can go on to introduce some algorithm for finding prime factors of simple numbers. Plenty of practice in the process is given and we do not forget that, although it may not appear so at first sight, the child also derives great satisfaction from seeing a copy book page full of neatly set out problems produced by himself.

The next examples are from the realm of Geometry. They shew that drawing exercises can be designed to illustrate elementary principles or to practice fundamental constructions and yet to have in them seeds for the future. We want for instance to practice the construction of right angles. Draw  $AB$  and at  $A$  erect a perpendicular  $AC$  (See Fig. 1) Take any point  $F$  on  $AB$ . Draw lines  $FP_1, FP_2, FP_3$ , etc. to cut  $AC$  in  $P_1, P_2, P_3$ . Draw  $P_1Q_1, P_2Q_2, P_3Q_3$  perpendicular to  $FP_1, FP_2, FP_3$ , and these lines will soon be found to envelop a curve which is a parabola. If  $AC$  is bent into a circle with  $F$  inside it the corresponding curve is an ellipse.



Or again we want to practise the rule for finding areas of rectangles and parallelograms. Start with a square  $ABCD$  (See Fig. 2 and 3.) We want a rectangle equal in area to the square but with



one side  $AB$  half that of  $ABCD$ . The other side  $BC$  will have to be double that of the square. We can go on to make rectangles with  $\frac{1}{3}$  and 3 times the side of the square. The rectangles can be arranged either as in Fig. 2 or as in Fig. 3. In both cases the corners lie on a curve which is a hyperbola. Again the square may be drawn like a diamond and by reducing and increasing the length of the diagonals in the same ratio rhombi equal in area to the square arise.

Their sides envelop hyperbolae.

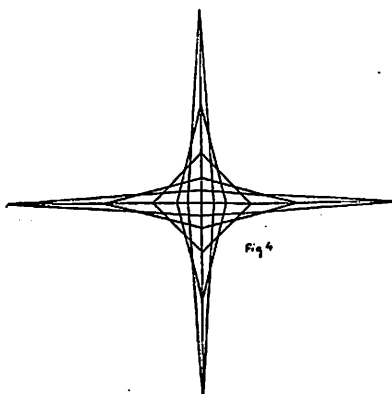


Fig. 3, illustrates the way in which a hyperbola arises in analytical Geometry. Fig. 4 bears within it the law that the triangle formed by the asymptotes of a hyperbola and by any tangent is always of constant area. Both properties will be met by those pupils who go further than the ordinary level G.C.E. syllabus and if we want to give our pupils some idea as to what modern mathematics really is we must exceed that syllabus in many directions.

When the pupils have entered the third seven-year period, the awakened intellect must be given good exercise. The boys particularly, but the girls too, are in a very difficult period of their lives. They experience new forces arising in their own organism and unaccustomed reactions to their environment. If we can give them confidence that their thinking powers are able to cope with many of these problems it will be a great help to them in their struggle. Bearing this in mind we can introduce permutations and combinations and the elements of probability calculus at this stage. This does not only show the pupils that their thinking can grapple with problems which they have probably not expected to yield to mathematical treatment but it also gives excellent exercise to the intellect. An additional advantage is that only very elementary mathematics is required.

The intellect must also be given food in the form of problems to which no immediate exhaustive answer can be given and which can occupy the young people even beyond their time at school. Such a problem arises for instance in connection with the nature of irrational and imaginary numbers which can easily be introduced when dealing with the solution of quadratic equations.

In Rudolf Steiner Schools the introduction of Logarithms and of trigonometry is postponed on purpose until the children are about fifteen. At that age they are mature enough to be introduced to these subjects in a way which links them immediately with more far reaching mathematical ideas. Logarithms are introduced via Arithmetic and geometric series which links them straight away with the laws of growth and makes it possible to penetrate to the number  $e$  without undue difficulty. Trigonometry is started from the circle and from the problems of calculating  $\pi$ . The introduction of  $e$  and  $\pi$  in quick succession raises immediately the question as to their connection which can lead to interesting discussions. Such a question need not, of course, immediately become conscious and the teacher will have to exercise his tact whether he should or should

not raise it if the class does not do so. He can be certain that the question has been planted in the subconscious mind if the presentation has been alive and interesting enough and sometimes it is better to let such a question lie to mature in the subconscious than to raise it forcibly. It may easily arise two years later when the calculus is introduced for which the work about logarithms and trigonometry, if done as indicated above, has been a good preparation.

The work in Geometry should also be planned to go beyond the ordinary syllabus. In the first year, when the children are about fourteen, a study of regular polygons and polyhedra can arouse great interest, revise a good deal of elementary Geometry in a more connected way and link up with the work on irrational numbers done at the same time in connection with quadratic equations. During the next year the idea of a locus can be taken up again and used to introduce conics and other curves. The spirals link up very well with the work on logarithms. Here the idea of infinity can be introduced by the transformation of one conic into another. This is a good preparation for the first steps in projective geometry, treated of course synthetically, which should be made in the third year. This work can again easily be linked to the extension of plane trigonometry to spherical trigonometry, to the study of map projections and elementary mathematical astronomy and navigation.

The fourth year, if such a year is possible, should link geometry with algebra in a more formal way by studying analytical geometry and calculus. It is more important here to get into a more modern outlook in the subject than to give practice in the solution of complicated problems.

All the time the work will of course be connected with the historical development of the subject and in the last year the sort of problems which exercise modern mathematicians should at least be hinted at.

The four year course outlined above is of course an ideal. Even in Rudolf Steiner Schools much has to be sacrificed to the examinations and only in rare cases will time permit one to carry out the full curriculum. The course does however give, in the writer's opinion, the mathematical education which a generally educated modern man or woman should have had. Its width does, of course, make it impossible to develop skill in the use of all the ideas and techniques introduced. Certain sections of the work will always have to be singled out for more thorough treatment and the rest will have to be given more descriptively. It is however only the future mathematical and scientific specialist who will require skill in the use of higher mathematics. Every educated citizen in the modern world should, on the other hand, have some idea of the techniques which the specialists use and they should know what the specialist is talking about. The day will be a red letter day in the annals of British education, when it will be realised that it is the task of the schools to produce generally educated citizens and that is the task of the university to educate specialists.



An attempt has been made above to show how mathematics can be used as a means of education and particularly what experiences in mathematics are suitable for the various age groups. It is at the same time an account of the mathematics curriculum of a Rudolf Steiner School. What has been said stands and falls of course with the truth of the picture of child development given by Rudolf Steiner. Much that has been outlined can probably be used in any school. If anybody feels encouraged to try to do so and finds that it works, this may perhaps encourage him to think that there might be something in Dr. Steiner's psychological teaching.

### A Greek Poem in Class V

Roy Wilkinson

IN Class V the Teacher is dealing with the Greek culture. The stories and myths form a background. It is beneficial to support the main teaching in all possible ways, to give as comprehensive a picture as possible. As previously mentioned with regard to Norse Mythology, it is not easy to find exact requirements. Hence the following original lines cast in the classical dactylic hexameter.

#### Hymn to Prometheus

Hail to Prometheus, the Titan, the helper of man and creator.  
 Clay was the substance he used and in likeness of gods then he shaped it.  
 Goodness and evil from hearts of the beasts in man's breast he enfolded.  
 Fire he brought down from the realms of the skies to perfect his creation.  
 Movement of stars he explained to the wondering earth-dwelling people.  
 Numbers he taught them to use and the plants which heal sickness he showed them.  
 Symbols he taught them to write, representing the sounds of their speaking.  
 Building of ships did he teach and the training of beasts to man's service.  
 Uses of wood and of stone for the building of houses he showed them.  
 Into the depths of the earth did he guide men to find precious metals.  
 Zeus he defied and brought fire down again when the god would deny men.  
 Torment and anguish he suffered for harsh was the fate decreed for him.  
 Bound to a cliff, overhanging a sinister cleft was Prometheus.  
 Bravely the Titan endured and at length one arrived to release him.

### The Music Lessons in the First Three Classes

Marjorie Watson

THE general music lesson in Classes I, II and III is an active lesson in which, through rhythmical movement, singing and playing percussion instruments, the children gain experience of musical matters which will later become a subject for more theoretical instruction. At this age the child's natural love of all rhythmical activity is much in evidence and, wisely guided, can become the basis for real musical appreciation. The first lessons will appear to consist largely of games and stories, but will be formed according to the teacher's intention to present comparative note values, small rhythmic figures, or changing bar-times, to encourage the feeling for a regular pulse or for the balance of musical phrases. The music which inspires and controls the movement will be improvised.

An example of such a story, shorn of detail in the telling for the purpose of this article, could be as follows. The King, wishing to make all safe for his daughters the princesses, sent out his soldiers to make a guarded circle around the palace grounds: soldiers march: strongly articulated crotchets. Then the princesses come out to play, so pleased, they run over the lawns: lightly stepping quavers, join hands in a circle and dance: the ever popular skipping step played as dotted quaver and semiquaver. The skipping circle might change direction, going the other way round at a word of command which would be given so that the change would correspond to the musical phrasing. But in spite of the king's precaution he loses his daughters, for a great wind springs up and whirls them far away. The wind motif can be very successfully played in three gusts with the accent falling on the third, shown by circular movements of the arms growing bigger, the last one lifting from the ground in a high jump. This rhythm is called an anacrusis, *i.e.* one which does not start on the strong beat at the beginning of a bar but is led in by preparatory beats. The rhythm of breathing is the prototype of all such, and many labour movements follow this pattern. Some of these can now be presented, starting with the tolling of the bells which warns everyone in the kingdom of the loss of the princesses. First we see at work the cobblers hammering in their nails in strict time with the music, - quick light movements for the small nails, slower for the big ones: *accelerando* and *ritardando*. Then we see the men who break stones from the quarries with heavy mallets which are swung up and crash down: an excellent anacrustic rhythm which can be a wonderful outlet for surplus energy! but in which the blow must be exactly timed to the strong beat of the music. The children will suggest many others, such as tailors stitching, cooks stirring the soup, farmers sowing the

seed, but to bring this example to a close, we must divide the class into two halves: the lost princesses will be in one corner, and from the opposite corner come galloping out the brave adventurous ones who will find them and lead them home.

Such a story-exercise can be repeated many times, in fact the children will demand its repetition and, watching them, the teacher will see indications of temperament in the child who plants his feet firmly on the ground and the one who prefers to trip lightly on his toes and has to be encouraged to stamp: in the child who revels in the gust of wind and would like to go on and on jumping and perhaps falling down, and the one who asks with anxious eyes "Will the princesses be found again?": in the child who, when instruments are given out, always chooses the drum and cannot wait to beat it, and the one who is happiest with a tinkling triangle.

Experience of labour movements into which a dynamic element enters, as in the fall of the mallet, the downward pull of the bell rope, the wide flinging gesture of sowing seed, will have prepared the children to recognize the musical phenomenon of the accented note occurring regularly in a string of equal note values and dividing them into groups of two, three or four. They can be told that the strong note is always the first of a new group, and can listen and try to distinguish different groupings, expressing the first beat by stamp or clap or drum beat or clashing cymbal. In Class III they will be ready to learn how these groupings are indicated in musical notation. As they have seen a conductor stand before the school orchestra the significance of his gestures can now be explained, and the children will certainly wish to beat time to various musical examples.

They will have had experience in Class II of writing the different note values on the blackboard. If carefully prepared by sufficient preliminary stepping and clapping and combining of note values, often in association with some dramatic action, the writing of them will present no difficulty to the vast majority of children. For instance, long before the crotchet has been referred to by this name it has been called the walking or marching step, since this indicates its normal rate of progression. The memory of the marching soldiers can be called on and can be related to the symbol of a line of crotchets, writ large, marching across the blackboard. The crotchet has also other associations; it has been experienced in its relation to other note values. The proportion of two to one has been expressed in many different ways, e.g. two claps to one step, or, reversed, two steps to one clap. Children love to do this, changing from one version to the other at a word of command or in accordance with the music when it has been pre-arranged that the treble is associated with claps and the bass with steps. (If this is attempted treble and bass should be kept as far apart as the keyboard will allow.) This proportion appears again in an exercise which is a great favourite, and which we call Horses and Drivers. The driver stands behind two horses. The horses give their inside hands to each other and their outside hands

reach back to the out-stretched hands of the driver. The team moves forward, the horses stepping quavers with knees coming high like trotting ponies; the driver must take long striding steps at the corresponding crotchet rate. Some drivers will be more successful than others at first, but the exercise will be asked for week after week and all will be proficient in time. It will be seen that association with this memory makes the writing of two quavers with their joining stroke directly below a crotchet a very natural and easily acceptable sign for the respective note values. The children should always write the note-values themselves and should discover that eight quavers can be written below four crotchets or that three crotchets equal six quavers. These values can be related to the tables they are learning at this time. One child seeing the two quavers corresponding to one crotchet recalled the morning main lesson in which she had just learnt that two pints equal one quart. All such associations of ideas should be welcomed.

A story-game which was so popular that it was asked for by one child or another every week throughout the year we called Giants, Dwarfs and Fairies. In this story the dwarfs stepped at the rate of minims, and at one point carried a heavy sack on their backs. In the next year it was easy to call to remembrance this rather slow rate of progression and the burden of the dwarfs. This gave the first pictorial representation of the minim with its round open head suggesting the sack. When presented in this way, in connection with actions often performed, the conventional musical notation takes on a significance and meaning too often lacking in the minds of children confronted with a sheet of printed music. Learning to write the symbols on the blackboard as suggested here is a first step; later the children will forget the story and the picture element and will accept the notation in relation to the sounds they hear, taking pleasure in writing down simple rhythmic phrases. This should precede any attempt to read music, and will be a great help in doing so when the time comes for instrumental lessons.

Recognition and notation of pitch is developed later, and in this both singing and flute-playing take part. The formal singing lesson comes later in school life, but a sound basis for what will then be done can be laid in these younger years.

Studies in phrasing and form might sound an ambitious and unsuitable undertaking for Classes I, II and III, but the elements are to be found in Folk Song and Nursery Rhyme, and here again foundations for future understanding can be laid in joyous activity when the children sing such songs and at the same time step the rhythm and move in a pattern which has been built to bring to expression balance of phrase, repetition or variation of rhythmic figures and the like.

Sometimes instead of singing the tune, percussion instruments will be used to play with the piano, and here also respect for the shape of the music can be shown in the choice of instruments, of when a

different instrument shall take over and when the first one shall again be employed.

It will be seen that all the exercises described can be related to some aspect of music. This relationship should be clear to the teacher; for the children the story, the game, the movements exist for their own sake, but all these activities in the younger classes will be the basis of understanding and conscious appreciation in the Upper School.

## Questions and Answers : 10

*What do you expect from the school doctor of a Rudolf Steiner School?*

I doubt if whoever asked this question was aware of how difficult it is to answer briefly. For the question should be rather: what did Rudolf Steiner expect of the school doctor, – and that was a great deal.

So I shall merely give a picture of the ideal school doctor – an ideal to which only a few of us have been able to attain.

First then, the doctor should be a member of the teaching staff. Then he must examine every child. In what do these examinations consist? First we must find out all previous illness. It gives a very different picture of the child if we know that it has either had all the childish diseases, or that it has been free of them. Very often the stronger children have gone through them all, whereas the weaker ones, who are more weighed down by the influences of heredity, have had nothing at all. Then we want to know at what age they could walk and talk, how far back they can remember. All these factors give us an indication of the strength of the personality.

The report should also state how the condition of the body accords with the age; and I have always made a practice of measuring the head, and determining in whether the spine is straight or curved, and whether the feet are flat. It is also of interest to find the relation between pulse and breathing rate. One can also state the relation of chest height to abdominal length. Physiognomical characteristics should be noted, and besides these also, the usual routine examinations.

As a result of these findings, the doctor should be able to discover the child's temperament, and such things as for instance, whether it needs special speech exercises or curative eurhythm, and which musical instrument would be the best for it to learn.

Again, consultations with parents and teachers will widen his knowledge of the children, and help him to prescribe remedies for particular difficulties. At the Teachers' Meetings, he will learn about their general behaviour, and what subjects they find easy or not so easy.

Whenever there is any question of a child's having to leave, through difficulties of discipline or of ability to learn, it will be the school doctor's task to try and find some way of keeping him at the school. With the help of the teachers, he will try to come to a real understanding of the child's destiny.

This then gives us an idea, if only a very general one, of the doctor in a Rudolf Steiner school.

N.G.

## The First King

An Advent Story for Older Children

R. Lissau

FAR away and long ago there lived a king and a queen who had neither son nor daughter. Yet one day, when they were no longer young the queen bore a son and great rejoicing arose all over the kingdom. The king was very pleased and he called together all the wise men of his realm, soothsayers, astrologers and prophets, that they should forecast the life of the new-born child. The wise men met together and there was much whispering and shaking of heads amongst them. After three days they went before the king and the queen, and the oldest and wisest of them said: "Oh king, your son will do one day what no man before him has done nor will do after him. It is so unique and mysterious that we have not been able to find out its nature". The king remained silent, but the queen, after a while began to speak and asked: "Is it something good for him which he will do one day?" At that there was more whispering and shaking of heads, but in the end the oldest and wisest said: "We believe that everything considered there will be more good for him in this deed than pain". The king thanked his wise men and dismissed them with many gifts.

The boy grew up under the loving care of his mother, but when he reached the age of twelve he was sent away from the royal palace to be educated at the great temple that lay four miles outside the walls of the city. Here he learned the songs and stories of the creation of the gods, of the creation of the earth, of the old times in which the gods still lived on earth and ruled over it, of the times in which they sent their sons to help men and rule over them, and of the more recent times when the gods were wont to speak through kings and temples. He learned the times of the rise and the setting of the stars and their significance, when it was right to sow and when to harvest, when the king was to judge among his people, and when it was right to celebrate. He learned of the plants and their use, of the minerals and precious stones and their virtue, of the beasts and birds, the rivers and seas. He learned these stories gladly, he soon could



say them by heart and asked for more. And so interested was he in all knowledge that when some years had passed he was allowed to go to the Great Priest himself to get instruction from him. He loved these hours and looked forward to their coming. For now he was allowed to ask, and the Great Priest knew how to answer his questions. But however many questions the Great Priest answered, his pupil realised that behind all this was an unfathomable wisdom which he had not even begun to probe.

But these happy times came to a sudden end. One day, the prince had hardly reached his nineteenth year, he was called to the room of the Great Priest at an unaccustomed hour. When he entered the room the Great Priest who had never done anything like it before, bowed down before him and said: "The king, your father, has died. Go, and rule over your people".

"I do not want to rule", said the young king, "I wish to learn more and understand".

"What I can teach you, I have taught you", replied the Great Priest, and the young king knew him well enough not to try any further. But as he left he felt sad and ashamed that he could not be entrusted with more of the knowledge for which he was thirsting.

Soon the young king became famous for his love of wisdom. His people loved him and from far and wide learned men came to his court. He treated them well and knew no greater joy than to have converse with them. For he was in search of the man who knew more than he himself. But the more he searched the more clearly he saw that he knew more than other men. He ruled his people well. The stars told him the most propitious times for his own actions and for the activities of his subjects. He rarely, if ever, made a mistake, and so he was trusted by everybody and his judgements were approved by all his people. Yet it was just this ease with which he ruled which in the end made him dissatisfied with his existence, and once more he set out on his search for knowledge. He wrote letters to the kings of all the neighbouring countries and asked them for the hands of their daughters. For he hoped that one of these royal maidens might hold the key for the wisdom for which he was searching. And as he was such a powerful and respected ruler the neighbouring kings did as he had bidden them. There was much which the king was to learn from these princesses, and one of them he loved dearly. Yet after a few years had passed he again felt sad and dissatisfied, for again ultimate wisdom and insight had eluded him. But this time he knew of no new person whom he could try and ask, and so in his despair he sent a messenger to the Great Priest, whom he had not seen since he had become king, and asked for an interview. But when the messenger returned the answer which he brought back was: "When I have something to tell you I shall call for you".

No longer was the king young, no longer did he hope to understand all; and yet he could not forget the ambition of his youth. Then there came a year which was to change his whole life. The wife he so dearly loved died as she was giving birth to a child, and

with her died the child. And then suddenly the stars did no longer speak as they had done before. His calculations went wrong, his plans came to naught. Everything on which he had founded his life disappeared. He was alone and uncertain. Then one day came a messenger from the Great Priest and he said to him: "When to-night the sun sets, leave your palace and go to the temple. Go on foot and do not be late. The Great Priest will be waiting".

The king did as he was bidden. Exactly when the sun set he left his palace, he walked silent and had no companions, and he allowed himself no delay. He walked along the highroad with a big forest stretching to his left. Darkness closed around him and complete silence reigned. Then suddenly he heard a sound that made him stop. His heart beat fast. It seemed to him he had heard the faint cry of an infant child near-by. He could not see the babe in the darkness, and he was not to delay. For was not the Great Priest waiting? He moved on, but again the child cried. It seemed to him a call for help. And yet he could not help. The Great Priest was waiting. Was he to miss the great chance of his life, the chance that never might come again? But now the cry of the child brought back to him the memory of the woman he had loved before all others; of her who was dead. He left the highroad and followed the call. It took him some time to find the right place. He found there a beautiful woman, dead, and beside her lay a newly-born child. He convinced himself that the woman could not be helped any more; he piously sprinkled earth over her and spoke the prayers for the dead. Then, with greatest care, he picked up the little being, wrapped it in his cloak and went back to the highroad. He went along but slowly that the child should not come to harm. He knew he would be late. He knew he had missed his chance. Yet he continued on his way to the temple.

When at last he arrived the Great Priest was waiting. "It is good that you have come", he said, "for we have been waiting for this child". Then he beckoned to a servant who came and took away the child that mean-while had fallen asleep. He asked the king to follow him and led him up to the top of the great tower from where, when the king had still been young, he had often watched the stars. With the whole splendour of the starry sky above them the two men sat down. They looked up. At first, the Great Priest did not speak. Then after a long, long time he broke the silence:

"What is it you can see?", he asked.

"I can see a new star which never before had stood on the sky", was the king's reply.

"What is it you can hear?"

"The voice of a small child".

"What is it you can feel in your heart?"

The king hesitated a short moment; then he replied: "Love".

"What does the star on the sky tell you?"

"The old order in heaven is dead and no longer can my art foretell

the future".

"What does the voice of the small child tell you?"

"Out of death can arise life".

"What does the love in your heart tell you?"

"No longer can I rule my fellow men".

"Then there is nothing that I can teach you beyond what you know already. Go and search for that child of whom you have spoken. Hard will be your journey and through many a desert will you pass. But one day you will come to a lonely valley. A small brook waters its green meadows. There you will see some tents. Two kings you will meet there on the same search as you. Together with them you will find what you have seen already, and what all the earth has been expecting. Go".

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### Speaking of Education . . . .

*(Contributions to this feature are welcome)*

The decision of Somerset Education Committee to serve butter at meal-times to their staffs does not refer to teachers, but to staffs employed in kitchens.  
*News Chronicle.*

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Scholastic attainments have been given an inflated importance over the past decade or so, to the point that a Toronto firm advertised for a window washer with a Senior Matriculation Certificate.

*The Monthly Journal.*

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For the first time new students entering Oxford University were welcomed by the Vice-Chancellor on Tuesday in English as well as in Latin.

*The Times Educational Supplement.*

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Dr. Robert Maynard Hutchins, at 50 is one of the United States' leading educationists . . . he is known for remarks such as, 'All universities should be burned down every 25 years lest they get in a rut'.

*News Chronicle.*

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Would anyone interested in corresponding on the Philosophical, Political, Economic, Psychological or Sociological aspects of Anthroposophy please write to Gerald Hall, M.A., New College, Oxford.

## BOOKS

Having found that "practically no educated man of my acquaintance knew anything about Steiner", Dr. A. P. Shepherd set out to "give to our scientifically minded age an explanatory introduction" to him, and to his spiritual scientific teaching known as Anthroposophy. The result is his *A Scientist of the Invisible* (Hodder and Stoughton 12/6d.).

Here is a supremely well-written and readable book, in which hardly a single aspect of Steiner's life and work has been left untouched. The middle section which summarizes Steiner's own story of his life is extremely well done, and will provide anyone with all the essential facts they may need to know about him. If they proceed to the next section however, in which he speaks of Steiner's teaching on Anthroposophy in the hope of obtaining in this one book a similar survey of that, it will be a pity. For the value of this section of Dr. Shepherd's book lies more in the author's sense of the importance of Steiner's outlook on man and the world, than in its content as a digest of that outlook. There is no royal road to Anthroposophy any more than there is to any other science worthy the name. To 'explain' Steiner is half way toward implying that he couldn't explain himself, which, in view of the demands that his subject made on Steiner's own way of writing, would be to lose the significance of the difference between 'knowledge' and 'information'.

In the last twenty-five of some two hundred pages, Dr. Shepherd describes what he calls "Applied Spiritual Science" as it is already being worked out in Education, Medicine and Agriculture. We cannot help thinking how much better it might have been if, starting from this, and giving more space to what is already being accomplished in these spheres, Dr. Shepherd had traced their origin back to the teaching which underlies them. Then the way would have been left open for a final 'Bibliography' chapter, in which - unlike the usual merelist of books - the author could have directed the reader with helpful comments to a study of Dr. Steiner's own work. The absence of this, in view of the tremendous range of Steiner's published work, and in spite of the author's frequent references in the text, is the book's most serious omission.

While we are obliged to write of this book, and to estimate the fulfilment of the author's aim in the light of our own reading of it, we do not overlook the fact that others will read it differently. To many of them it may be the first step on a path which all must find in their own way. That such a possibility is opened up by this book, and that it has been written by a man of Dr. Shepherd's obvious experience and ability is a matter for deep gratification, and we cannot but welcome its appearance.

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How far the works of Steiner have failed to reach a wider public in this country owing to their imperfect translation from the original German, is a matter of much conjecture. Not only is an intimate knowledge of the language essential but also an inner sensitivity to what Steiner had to say which goes far beyond the dictionary meanings of words and their equivalent in another tongue. Moreover, as so much of his work refers to practical activities in social life, to the qualities mentioned above must be added the further one of considerable experience in the kind of work under review.

But things are improving. A step in this direction has recently been made in republishing a course of lectures Steiner gave in Ilkley in 1923. *Education and The Modern Spiritual Life: Anthroposophical Publishing Co., 12/6d. - postage 9d.* The course has already existed in English, but it has now been thoroughly revised by a teacher of many years experience in one of our English Steiner schools - J. M. Darrell. He is not only intimately acquainted with the German text, but by the very nature of his work as a teacher he has been obliged for years to pore over all that is contained therein.

But it is not only a book for teachers. It could be of extreme value to those parents who want to know more of the background behind the education their children are receiving. It will enable them to understand many things they have not fully appreciated before, and will give them a basis on which to discuss the education with others who are not acquainted with it. There is no doubt that this will remain the most authoritative English version of what Steiner said at Ilkley on education, for many years to come.

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### For Children

It is good to find that the pleasant land of make believe still fascinates the modern child in its fiction, in spite of the rival claims of the inhuman phantasmagoria of outer space, and the depravities of modern comics. It is good to know, too, that there are still writers for children who keep to the perennial charm of whimsical fantasy. Miss Patricia Lynch – who already has twenty books of Irish life to her credit – has in her twenty-first (*Orla of Burren: Patricia Lynch; J. M. Dent and Sons; 8/6d.*), written something for the child who often wonders what it was like to be alive in a bygone age. Orla and Standish set off to join their parents in Galway, and are guided thither by a magic stone which, when they are in doubt, they have only to throw on the ground and it shows them their direction. With the fascinating 'reality' characteristic of a dream in which one lives out the situation though knowing all the time that it is a dream, they arrive in Galway, join their family, and are caught up in all sorts of adventures involving pirates – but it is the Galway of several hundred years ago; and they are the only two who know it.

But things like that can happen in Ireland, though it is not for this reason that Miss Lynch has set her story in this country. All her books are of Ireland; and added to her admirable facility for telling stories to children, is her unique gift for depicting the Irish character and scene. Children of eleven and upwards will enjoy this story.

**The People in the Garden:** *Lorna Wood; J. M. Dent and Sons Ltd; 7/6d;* brings witches and wishes and eccentric gardeners into a modern setting, together with a whole company of otherwise familiar creatures, who are none the less as distinctive characters as those in Alice and Wonderland.

**Grab Village** by *Julia Clark; J. M. Dent and Sons; 7/6d.*; takes fantasy into the realm of the inanimate things of everyday life, where the picture of a ship over the mantelpiece can 'come alive' – as well as the china dog that stands below it.

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Disgruntled ten-year old to his neighbour during an art lesson – "What you want is rubbing out, and drawing again!"

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Teacher of Class Two asked one of her children how his brother was. "Oh! He's better today. The doctor said his temperature's gone down to 240".

\* \* \* \*

From an English lesson: A corpse is a small group of trees.

## Exchange with Heidenheim

J. Compton-Burnett

**H**EIDENHEIM and Kings Langley are very different. The quiet valley of Kings Langley, though so near to London, slopes away to gentle farmlands which still retain much of their rural character and The New School looks out over an unspoiled countryside to a distant horizon. The town of Heidenheim, situated in southern Germany, lies high above sea-level and the quaint roofs of its old houses cluster thickly up the sides of a steep hill. But the ancient castle which crowns its summit looks beyond this quiet scene to a valley seething with industrial activity and encircled by thickly wooded hills. These two places so different in character and separated from each other by more than 24 hours of rapid travel are linked together by close bonds of friendship, a friendship made possible by the fact that there, too, there is a Rudolf Steiner School.

Many years ago, when the tragedy of war was at its most bitter, when a lurid light over London broke the darkness and when explosions and the roar of enemy aircraft were heard both day and night, the hope arose in the hearts of certain teachers then working in Kings Langley that a time would come when these grievous experiences of childhood might be healed by the forces of friendship and kindness. Perhaps one day it might be possible, by an exchange of classes between two Rudolf Steiner schools, to implant into human relationships a seed, which if it germinated and grew, would produce effects not easily to be estimated.

Years passed. By the autumn of 1951 The New School had a Class XI for the first time, and the teachers awoke to the fact that if *this* class were to have the experience of visiting a continental Rudolf Steiner school matters must be put in hand at once. The first thought of both parents and children was a school in Switzerland, but enquiries proved this to be impracticable. So now the moment came to approach the German schools, asking whether any of them would be interested to send a class of children to The New School in exchange for our Class XI. Several answers were received, but our teachers were all struck by the warm, constructive note of the letter from the Freie Schule, Heidenheim. Seemingly small things, however, tilt the balances of life, and it was the fact that our class and their proposed class had the same number of children that finally made us decide on an exchange with Heidenheim.

On a sunny spring morning our party started off into the unknown, and it was a strange thought that sometime during the next night their train would be passed by another bearing the German party towards an unknown Kings Langley.

This party was the first Class XII of the Heidenheim school, a precious treasure, and it was apparent that the accompanying

teacher felt a certain anxiety. And these 17/18 year-olds seemed to us older and more developed than our children, especially with the top class away, and we, too, wondered how things would go. Letters from Heidenheim spoke of the kindness our children were receiving, and spoke, too, of a certain English shyness which they found it difficult to lose. This was added to by the fact that such an exchange was at that time very unusual; and as it is not customary to wear uniform in German schools, the Kings Langley red blazers and caps, with their striking badge made a conspicuous impression. But was everything strange? No! The spirit of Rudolf Steiner's life-work permeated both the schools, and something familiar and loved enfolded teachers and pupils alike, gradually dispelling doubts and instilling confidence. By the end of the term, there was no doubt at all. If in any way possible the exchange with Heidenheim must be continued.

The following school-year strengthened this resolve. The English children settled back into their own school with no difficulty; and they had returned maturer and better able to make good use of their last school-year. They corresponded with their German friends. It was clear that firm relationships had been established. So in the summer of 1952 the second chapter was written. Our party, that year somewhat younger, travelled across to this sister school, and again their Class XII came to us. That summer the Midsummer Festival was a special one, for it was also the occasion of the opening of our new school hall with a performance of Purcell's "Faerie Queen". In this production the German pupils were very active, not only in the music and eurythmy, but also in constructing scenery and helping with the lighting.

In the summer of 1953, The New School had no exchange class. We were, however, delighted to receive the Heidenheim party and to experience the confidence with which these young people now came to us. The teachers, too, were getting to know one another and learning to enter into the joys and struggles of the other school.

The growth of numbers in English Rudolf Steiner schools is slow compared to their rapid growth in Germany, and by 1954 the Heidenheim party was double the size of its Kings Langley exchange; but in some ways this year's visit seemed the happiest of all. The earlier relief that everything was going well was lost in the real satisfaction that these visits bring. How much one country can give to another and how much each can receive when united in the spirit of Rudolf Steiner.

Now we await the future chapters of "Exchange with Heidenheim" May they be many and their pages rich.

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An English essay began: "When I was young and little and being born at the side of a fairly big pond I was very fond of fishing . . ."

\* \* \*

## Weleda

### The Development of Rudolf Steiner's work in Pharmacy

S. Walters

IT is possible that many who read this magazine have come in contact with Weleda medicines to a certain extent, and to those whose association with Anthroposophy goes back over many years, the name 'Weleda' will be almost a household word. There are others, however, to whom this name means very little or nothing at all, and it is the purpose of this article to give a short picture of the Weleda, so that it becomes for these readers more than a mere name on a bottle of medicine or a tube of toothpaste.

The Weleda arose out of the need for an organisation where the special remedies indicated by Rudolf Steiner could be prepared, when he laid the foundations for an anthroposophical approach to medicine, and in fact the early work of this nature was carried out under his direct supervision, in a laboratory at the Goetheanum in Switzerland. Then the work outgrew this laboratory, and a separate organisation was founded, to which Rudolf Steiner gave the name 'Weleda'. At the same time, similar work was being carried out in Germany, and the laboratories at Stuttgart and Gmund were affiliated to the Swiss Weleda in 1924.

The British Weleda became a Limited Company in 1925, starting in a very small way in London, and in 1939 the company removed to Worcestershire, and set up its headquarters at The Chantry in the village of Fladbury. The Chantry stands in about 2½ acres of land, so there was now the possibility of growing many of the herbs and medical plants used in the preparation of the remedies. The cultivation of these plants is carried out on Bio-Dynamic lines.

In 1949 it was possible to open a small branch in London, and now the Weleda has a shop in Glentworth Street, near Baker Street, which supplies the needs of the doctors and customers living in London.

The medicines are dispatched by post daily from the Chantry to all parts of the country, and also to many parts of the world.

The work of the Weleda is of a very specialised nature, as its fundamental purpose is to make available to mankind remedial preparations in connection with the impulse of anthroposophical medicine. The approach to therapy acknowledges the connection of man with the spiritual worlds, and relates illness not merely to physical causes, but tries to bring to man's consciousness the realisation that he is a being of body, soul and spirit, intimately bound up with the cosmos, and that methods for the treatment of disease should recognise the working of spiritual forces through material substances, whether of mineral, plant or animal origin. Thus the methods employed by the Weleda are quite different from those of orthodox pharmacy, and the raw materials used are taken from the three kingdoms of nature, mineral, plant and animal. No synthetic dyes or flavouring agents are used to give the medicines pretty colours or a popular taste, but such colours and flavours as are present in the finished



preparations are those imparted by the pure natural substances of which they are composed.

Much of the work is of a rhythmical nature, and is done by hand, and this is carried out in as quiet and peaceful an atmosphere as possible. This of course adds to the labour and time required for preparing the remedies, but imparts to them something which no machine can give, namely a certain devotion or loving care which is felt to be an integral part of the working with the substances of nature and their conversion into agents of healing.

The work of the Weleda is largely connected with the rhythms of the seasons, and in Spring and Summer the countryside really enters the laboratory. The collection of fresh plants begins in early Spring with the wild Dog's Mercury, (*Mercurialis perennis*), which is made into tinctures and ointments used for the healing of wounds, etc. Then follow the Cowslips, from whose flowers a preparation is made which forms one of the ingredients of the Weleda remedy Cardiodoron. About this time too the young leaves of the Willows and the young fronds of bracken and certain ferns are collected and processed to form the basic tinctures for the remedy Digestodoron.

Other plants are collected for drying, for example young leaves of the Silver Birch, of which the Weleda uses a great quantity during the year, both for the tonic Birch Elixir and for Birch Leaf Tea, and at this season the fragrance in the drying rooms is wonderfully reminiscent of a Birch wood. Later in the summer comes the harvesting of the herbs grown in the garden of the Chantry, *e.g.*, Melissa, the Lemon Balm, Marjoram, Peppermint, Sage, Thyme, Lavender, etc. When these herbs are harvested care has to be taken that there is sufficient space for drying them in separate rooms, as the very aromatic plants such as Peppermint and Thyme would impart their characteristic fragrance to anything else in their vicinity.

As well as herbs and leaves, the blossoms of certain plants are gathered, including those of Elder, red and white Clover, blue Mallows, yellow St. John's Wort, white Chamomile, the green flowers of the Nettle, etc., and at this time every available inch of space is taken up by trays of flowers in the process of drying, and the laboratories and drying rooms present a very colourful appearance during this period. The drying is carried out as far as possible under natural conditions, away from direct sunlight, and only a little artificial heat is used to complete the process. When completely dry the herbs are stripped and rubbed or cut up and then stored away for future use.

As many as possible of the plants needed are grown in the garden, but there is not enough space for sufficient quantities of all of them, and so those that grow wild in the surrounding countryside are collected, and expeditions are arranged for this purpose.

The autumn brings the gathering of berries, the Sloes, (*Prunus spinosa*) for the tonic Prunus Elixir and for Prunus Bath Mixture, Hawthorn berries (*Crataegus oxyacantha*) which are used in great quantities in the form of a tincture, and Rose Hips, from which a syrup elixir is made.

During the winter the work is more concentrated indoors in the laboratory, and the special winter remedies are manufactured, for example, Infludo, for influenza and colds, and Weleda Cough Elixir, which contains among other ingredients Thyme, Horehound and Marshmallow, all of which have been grown in the garden of the Chantry.

Although much of the Weleda's work is connected with plants, a considerable number of mineral substances and a certain number of substances of animal origin are used. The raw materials of the mineral preparations are imported from the Weleda in Switzerland and made up here into the required remedies. The minerals are usually dispensed in the form of powder triturations, *i.e.*, dilutions of the actual metal or mineral raw material with milk sugar. Each of these dilutions consists of an hour's stirring, and one person is kept busy on this job.

The animal preparations are made where possible from freshly killed beasts, and friendly co-operation with the village butcher is resorted to in order to obtain the preparations required by the doctors.

The medicines themselves are dispensed as liquids, powders and tablets for internal use, as ampoules for injection, as ointments and oils for external use, as lotions and bath mixtures, etc., together with the herbal teas, which are either taken internally or used as compresses and lotions. There are numerous remedies for which Rudolf Steiner himself gave the indications, the formulae of which are modified from time to time as research is carried out on their composition and the processes involved in their use as healing agents. Most of this research is done in Germany, where the Weleda at Schwab. Gmund have recently opened a new laboratory for this purpose.

There is also a section for Veterinary Preparations, which receive the same care in their manufacture and the selection of the raw materials as do the medicines for human use. Probably the best known of these is the Weleda Lime Meal, which contains natural Calcium phosphate and Calcium carbonate in a base of bran, and which is given as a nutritive addition to the food of calves, pigs, poultry, etc.

Turning now from the purely medicinal remedies, the Weleda makes a wide range of Toilet Preparations, which includes fragrant Bath Milks, Lavender Water, Toilet Milk, Skin Food and Cold Cream. There are also preparations with a specialised purpose, namely those which care for the hair, the Hair Lotion, Hair Oil and the Rosemary Shampoos, and the dental preparations, Dental Lotion and Dental Cream, whose function it is to safeguard the health of the mouth and teeth. Mention should also be made of the Weleda Massage Oil, though this is not strictly a toilet preparation, for this product has many uses, ranging from giving relief in cases of muscular stiffness after exercise to the easing of pains of rheumatic origin.

Weleda Toilet Preparations are not cosmetic products in the usual sense of the term, but are really beneficial to the health of the skin, the hair, the teeth, etc., and their formulation has this in mind rather than the mere beautifying of the body. For these products, as for

the medicines, the purest raw materials are chosen, for example the finest essential oils of Rosemary, Pine and Lavender for the Bath Milks, the best beeswax and other fats for the skin creams, so that their use is both pleasant and fragrant while at the same time they promote the feeling of well-being in the body and nourish the outer parts of it.

This brief picture of the Weleda and its work will have shown how comprehensive is the task with which it is faced. The selection of the basic materials, their compounding into the special remedies and their ultimate dispatch to the customers requires not only a considerable expenditure of time, energy and patience, but also a deep sense of responsibility towards the doctors who order the medicines, to ensure that the preparations reach the patients as quickly as possible, and that the remedies themselves are prepared in the purest possible form.

A deep love of Nature and reverence for all her products lies at the foundation of the work of the Weleda, which demands from all its members a certain sacrifice, and a strong sense of the necessity for this type of therapy for the illnesses prevalent in our times.

An eight-year old's comments on the film 'The Conquest of Everest': "At the very top they had a brass band going - just when you wanted to hear the quiet of the snow".

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ARTICLES ON EDUCATION do not easily 'date'. Containing as they do, the fruit of many years of experience and study, they remain fresh and apt for a long time. We have been looking through some of the articles that have appeared in "Child and Man" during the last few years, and have prepared the following list for the benefit of more recent subscribers. Back numbers containing these articles are still available, and may be obtained for 1/- each from Secretary. The figures in brackets after the title of the article refer to the Volume and Number in which they are to be found, and they need only be quoted when ordering.

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