

The Teaching of Nature Study.

BY V. C. CURRY.

WHEN I came to write this paper, sitting beside running water in an Oxford garden, I felt absolutely overcome at the thought of having to step into the breach caused by Miss Drury's departure for South Africa, for she is so well versed in the pros and cons of this subject of Nature Study and Science in the Parents' Union School that I can only feel that I am attempting the impossible in trying to take her place. Perhaps there is more in it than meets the eye in the reply of the small son of the house to someone's inane question,—“Do you like natural history?” “If you mean climbing trees I do.”

I think I may safely say that Miss Mason's whole attitude towards the teaching of this subject is contained briefly on page 218 and onwards in her latest book.* What is said there is but a repetition of what has been said in her other educational books of the Home Education series, and, since presumably I am speaking now to enthusiasts for the P.U.S. scheme of work who will therefore know these books very thoroughly, I will only touch very briefly on these tenets and then see how they work out in practice.

Miss Mason says children are to *be given science in a literary form*. We are to give common information but in a

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palatable form so that mind may be able to re-act on the ideas contained therein. How does this work in practice? In the lowest forms the children become acquainted with the life history of most of the common plants, birds, and animals of the countryside, besides many that are only to be met with at the Zoo or in travels abroad. The children have read aloud to them, or read to themselves, that delightful series of books, the “*Eyes and No-eyes*” series, Oliver Pike's bird stories, the less good but very interesting “Tommy Smith” books. I was recently present at a meeting of some seven or eight hundred Guiders when we had a most enlightening talk on Nature work from a Scout Master who urged us all to take up this subject with our guides even if we had to depend on nothing better than a backyard for our field of observation. He asked us if we knew exactly how a cat or dog put down their feet, and what was the difference in their footprints, why does a dog have his toe-nails exposed, a cat pull hers in, and why is a pig fat? By such simple questionings as these he showed us how even this limited backyard might become absorbingly interesting. I realised that the answer to most of his questions might be met with in Form I. books. Of course he went on to tell us of kestrels building in a tower in central London and other delightful observations peculiar to himself.

In Form 2 we study the book of Arabella Buckley—*Life and her Children, Madam How and Lady Why* (always a great favourite), *The Sciences*, valuable because of its simple information, and an elementary botany book. It is difficult to realise that many people do not know the simple facts about astronomy as given in *The Sciences*. A few days ago I met a mother (one who had carried off every prize that Girton had to give when at college) bewailing that she had never been taught that stars and planets are different and that conceivably we may hear of planets of other suns!

In Forms 3 and 4, Arabella Buckley's books, *Winners in Life's Race, The Fairyland of Science, Stopes' Botany, Fritsch's Elementary Botany, Some Wonders of Matter, Cheesman's*

book about insects, are read. Besides being given common information children are now to be made familiar with scientific nomenclature, and much is built up

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on the structure of Form 2 work. Form 5 reads *Scientific Ideas*, Lapworth's *Text-book of Geology*, *Study of Animal Life* by Thomson, *Thoday's Botany*, and *Applied Botany*.

What place does narration take in these lessons? Miss Mason says that a lesson without narration is a lesson wasted. We were reminded two or three nights ago that there are many ways of narrating, and probably in science we shall often have to make use of drawings and summaries in the older forms to ensure that names are sinking in. But since we are giving knowledge in a literary form there is no reason why the ordinary narration should not take place even in a science lesson. By the way, there will be those here who recollect what Miss Kitching said concerning Miss Mason's new book,—words to the effect that we must constantly re-read what Miss Mason said lest the familiarity of the words should lead us to think we have no more to learn. It all looks so easy. One says "of course" all the way along, but I can't think of any method that would be more difficult and it is because we will *not* be simple enough. We all say firmly to ourselves "yes, narration," and Miss Parish says "You must Narrate," but I watched a lesson in literature being given yesterday, most admirably, but it slipped by with no narration.

Now it is often urged that it is foolish to have children sitting indoors conning the story of the lark as told in the series *Eyes and No-eyes* on a glorious day when they might be out of doors. Well, perhaps it is absurd for any of us to be indoors when we might be out of doors, and I believe one is much benefited by taking advantage of a sudden burst of fine weather and going out for the whole day. Yet in the main, school life must be based on regularity and these sudden flights into the open are impossible (the more so if one remembers the faces of other members of the staff in a school when the botany mistress ruthlessly thieves time allotted to French or mathematics). But surely we all endeavour during the Nature Walk, or on Guide afternoons, and at every other available moment to point out to the child those things of which he has read indoors. "When I am grown up," one of my pupils announced to me one day, "I shall bring out a bird book in which the birds will be painted as they really look." (That was said by a child who had the

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patience to sit for two or three hours on end watching to find a whinchat's nest. She found it and a reed-bunting's nest too). One sympathises enormously, and yet I know from experience how much easier it is to show a bird to a child when he already knows from a story he has read or an illustration he has seen, what to expect. The child who cares about natural history will be glad to meet with more knowledge in a literary form. The child who doesn't, and such a child seems to me to be exceptional, is usually glad not to be teased to observe those things that have not taken hold of his mind as a literary idea. Perhaps I may be allowed to give a personal instance to illustrate what I mean. For years I have known, in various bird books, pictures of siskins hanging on the cones of alder trees, and whenever I have passed an alder I have looked up, half expecting to see those little yellow-green birds. Last March I was picnicking on a common not far from London and came to some alders beside a lake. Looking up expectantly, I saw a pair of siskins hanging on the alder cones, singing sweetly, just as described in Coward's handbook.

There is so much too in learning to look at and enjoy scientific books. Most of us are not possessed of powerful microscopes—are we therefore to be debarred from enjoying, for instance, knowledge of the exquisite shapes of snowflakes such as are pictured in *The Sciences*? That picture gives a few shapes. A child reading that lesson brought to me a copy of the Geographical Society's Magazine in which were pictures of others of some three thousand shapes that are known. Speaking of beautiful forms in nature, we used to have a book in the school shewing shapes of pollen, but that I believe has gone out of print.

I lately asked a Guider who is keenly taking up nature work, if she ever read poetry, as the poet's vision of a flower will often fix a name when every available botany book has failed to impress the memory. "Oh no," she said, "I thought they just used any adjective to make it rhyme." I contend that this is not true and that the encouragement that Miss Drury lent to the use of poems in our Nature Note Books was very valuable. "What is this bud? I never can remember," said a grown-up, showing me a twig of lime the other day. I quoted to her the line my

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children love, about the "ruby-budded lime." "Thank you," she said, "I shall never forget *that*."

I pick up at random a book of poems—Meredith's. What does he say?

"Green-yellow bursts from the copse the laughing yaffle."

"Every woodland tree is flushing like the dogwood—flashing like the white beam."

"Swift as the swallow along the rivers light
Circling the surface to meet his mirrored winglets. . . ."

Here are three quotations from Shakespeare.

"Upon this promise did he raise his chin
Like a dive-dipper peering through a wave
Which being looked on, ducks as quickly in. . ."

"Lo! here the gentle lark, weary of rest,
From his moist cabinet mounts up on high. . ."

"Or as the snail, whose tender horns being hit,
Shrinks backward in his shelly cave with pain. . ."

Now what is Miss Mason's attitude towards chemistry? I think this is important. We are apt to overestimate the value of experiment. I have wondered if those who drove us through a dull course of finding out what washing soda was—when we knew,—which acid we had been given—we speedily found out by the method of tasting, which was forbidden!—and the daily finding out of Specific Gravity—which worried the life out of us,—were developing our "faculties," or what? We seemed to work at this kind of thing for years, and yet on arriving at the house of a very clever friend, who likewise went through this course I was astonished to hear her ask "How do you find Specific Gravity?" She went on to say something which I thought

very illuminating. "I don't remember one word of all that experimental science—only about Halogens and, now I come to think about it, I learnt that out of a book." But Miss Mason does not set Chemistry at naught. She would have us do all the experiments possible. But the experiment needing a well-equipped laboratory is probably something for the few, while the common-sense experiments are for the many—the answer to all the many whys of to-day. Why to we build a fire in a certain way, what is a vacuum, why do leaves fall in the autumn? I think practically all the experiments described in books we use can be done without more

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apparatus than can easily be obtained in an ordinary household—until the more specialised work of Forms 5 and 6 is taken.

Nature Walks, these are the great times of *finding out*. One must use them to point out leaf mosaic, plant association, bird song, habitats of plants, habits of growth, but they should also be regarded as times when the children *seek for themselves* and should be encouraged to go and observe by themselves. Teach the children if possible to be able to identify plants themselves—we were taught that at school and it has been the greatest help. What we want recorded in the note-books is what the children have seen themselves. That is the value of a painting. It is impossible to turn out even rather a bad painting without looking—and no one else's looking will help you. It seems to me that the whole of life is enriched by the study of Nature. What better way of whiling away a tedious railway journey than by looking out for favourite flowers on the railway banks, or trying to identify the different soils through which the line passes by looking out for plants we know to be attached to certain kinds of soil? On the way to Canterbury it is interesting to notice the number of wild flowers that survive the cement works near Strood. In the pits near the line all sorts of chalk-loving plants grow quite happily in spite of a thick coating of fine white dust over everything. Since I left Oxford some years ago I know of no place where I can see Water Violet growing except in a ditch close beside the line near Cambridge which I pass occasionally in June—it is a sight worth looking forward to.

Is it too much to hope that the Nature Note habit will help to protect England's wild flowers? Perhaps some of you saw in the *Morning Post* a few days ago the description of a *Cypripedium* that had flourished in Yorkshire until a collector got busy and every plant was uprooted. At Oxford the lovely *Limnanth* has established itself abundantly behind the barges moored near the tow path. But dredging is now in process and the *Limnanth* is being uprooted and not a word said. Besides the bird and flower list that is usually kept can we not keep field and pond and even road maps of our district shewing where plants of all sorts are to be found? I know that this can be made inter-

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esting even in London. Someone told me lately that there are sixteen different kinds of trees in the square in which she lives off Bayswater road, to say nothing of an enterprising wood-pigeon that hatched off its young in November last year. And everyone must have noticed how quickly a waste becomes thick with flowers where one would least expect it—I am thinking of places that can be overlooked from the top of a bus near Marble Arch.

There is another side to this habit of close observation that seems to me to be most important. Surely the child who grows up watching Nature will develop something of the great calm of Nature herself. It is an impatient age of rush and turmoil of thought—what indeed shall give a man peace at last? What rest to eye and brain to perceive the "unperturbed pace" of the

unfolding leaf, the gradual bursting forth of the praying hands of the chestnut! A lovely day in February tempts us forth to look for treasures in the hedgerows—does the lime or beech hurry for the sunshine? not a whit. *We* may hurry into our summer clothes or wear to-morrow's fashions, but not so Nature. A diary kept from year to year will show but little variation in the times when plants come out. Patience would seem to be a quality called forth by a love of outdoor things—patience above all in birdwatching—patience of a kind that can watch that working towards an ultimate goal that we know must be reached—the kind of patience that will perhaps in the end overcome that nervous irritation at the slowness of growth that will not hurry to keep pace with our so-called civilisation. “What do you think of my child's report?” asked a mother of a highly excitable, irresponsible, but gifted child the other day. “You see she must earn her own living, and I don't want her to be wasted, and I think she is wasted.” The child in question is just 11 years old!

Now most of us are unable to burn our candle at both ends—by which I mean to say that we cannot reasonably be expected to take our children star-gazing at nights and to watch the early bird catching the worm in the morning. But there are delightful books of astronomy on the programme and simple charts of stars which, if entered monthly in nature note book do tend to become memorised so that

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when the chance of seeing stars comes it is fairly easy to pick out the constellations. “I ought to know all about stars, father was always telling us about them but we never read,” said a mother grappling manfully with a torrent of questions from an eight year old son, such as “Does the moon have a night and if so how long is it?”

No—let us cease to *tell* children, there is other business for us on a nature walk. Do you remember how Hudson describes his father holding him up to see what he afterwards felt sure was the nest of a Bee-eater. He remembered distinctly,—even though he was only five years old at the time—the whole incident and was able years after to identify the nest.

This paper is not concerned with geography but it would seem that the study of plants and animals is inseparable from both the study of geology and physical geography—as Miss Newbigin so ably points out in her books that we use in Forms 4 and 5. Here I might say that we have had much fun in mapping out roads and ponds in our neighbourhood, and, having coloured them geologically, filling them in to show where good specimens of plants and a considerable list of birds may be found. Our great ambition is to find plants not recorded in Bentham and Hooker, or at least not recorded as found in that county. This zeal is maintained in the holidays when a 12 year old child last year sent me an excellent painting of *Lobelia Urens* which she had found in a part of Hampshire, where it was not recorded.

What can help us to look wider than science? Has any greater link between nations ever come about at all approaching the importance of Wireless? But are not those who look widest, to the great simple laws governing the universe also those whose lives are made lovely and pleasant by their delight in little things? It was so with Miss Mason. She loved the little things of the earth and found time for them amongst all her broad schemes for mankind in general. During the year in which it was my privilege to sit next to her at lunch, the conversation, I remember, veered round so often to what she had seen the day before as she drove along in her carriage, or to what we had seen while walking the lovely hills and vales about Ambleside. In particular I remember she did not share

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Wordsworth's enthusiasm for the Celandine which Miss Mason described as brazen!

In conclusion I want to read to you a poem by Evelyn Underhill:

IMMANENCE.

I come in little things,
Saith the Lord.
Not borne on morning wings
Of majesty, but I have set my feet
Amidst the delicate and bladed wheat
That springs triumphant in the furrowed sod.
There do I dwell in weakness and in power;
Not broken or divided, saith our God.
In your strait garden plot I come to flower.
About your porch my vine
Meek, fruitful, doth entwine;
Waits, at the threshold, Love's appointed hour.

I come in little things,
Saith the Lord:
Yea, on the glancing wings
Of eager birds, the softly pattering feet
Of furred and gentle beasts, I come to meet
Your hard and wayward heart. In brown bright eyes
That peep from out the brake, I stand confest:
On every nest
Where feathery Patience is content to brood
And leaves her pleasure for the high emprise
Of motherhood—
There doth my Godhead rest.

I come in little things,
Saith the Lord:
My starry wings
I do forsake,
Love's highway of humility to take:
Meekly I fit my stature to your need.
In beggar's part
About your gates I shall not cease to plead—
As man, to speak with man—
Till by such art
I shall achieve my Immemorial Plan
Pass the low lintel of the human heart.

** An Essay towards a Philosophy of Education.*