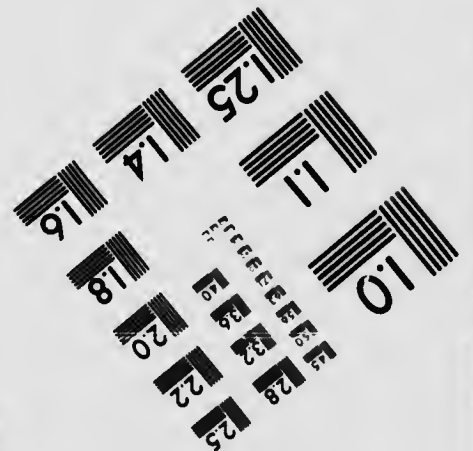
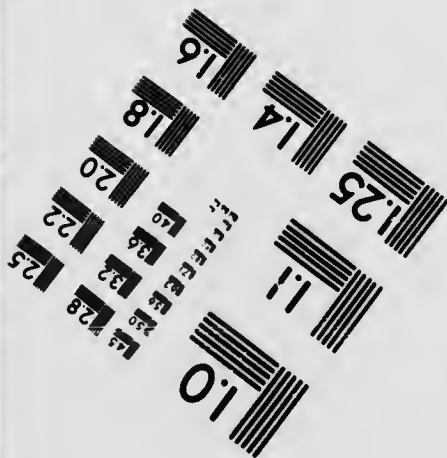
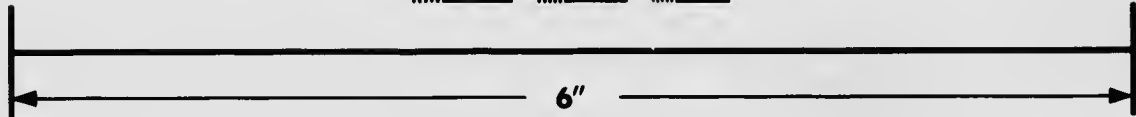
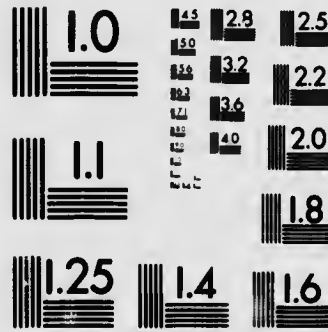


**IMAGE EVALUATION  
TEST TARGET (MT-3)**



**Photographic  
Sciences  
Corporation**

23 WEST MAIN STREET  
WEBSTER, N.Y. 14580  
(716) 872-4503

25  
22

**CIHM  
Microfiche  
Series  
(Monographs)**

**ICMH  
Collection de  
microfiches  
(monographies)**



**Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques**

**© 1992**

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/  
Couverture de couleur
- Covers damaged/  
Couverture endommagée
- Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée
- Cover title missing/  
Le titre de couverture manque
- Coloured maps/  
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur
- Bound with other material/  
Relié avec d'autres documents
- Tight binding may cause shadows or distortion  
along interior margin/  
La reliure serrée peut causer de l'ombre ou de la  
distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear  
within the text. Whenever possible, these have  
been omitted from filming/  
Il se peut que certaines pages blanches ajoutées  
lors d'une restauration apparaissent dans le texte,  
mais, lorsque cela était possible, ces pages n'ont  
pas été filmées.

- Coloured pages/  
Pages de couleur
- Pages damaged/  
Pages endommagées
- Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées
- Pages detached/  
Pages détachées
- Showthrough/  
Transparence
- Quality of print varies/  
Qualité inégale de l'impression
- Continuous pagination/  
Pagination continue
- Includes index(es)/  
Comprend un (des) index

Title on header taken from: /  
Le titre de l'en-tête provient:

- Title page of issue/  
Page de titre de la livraison
- Caption of issue/  
Titre de départ de la livraison
- Masthead/  
Générique (périodiques) de la livraison

- Additional comments: /  
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The copy filmed here has been reproduced thanks to the generosity of:

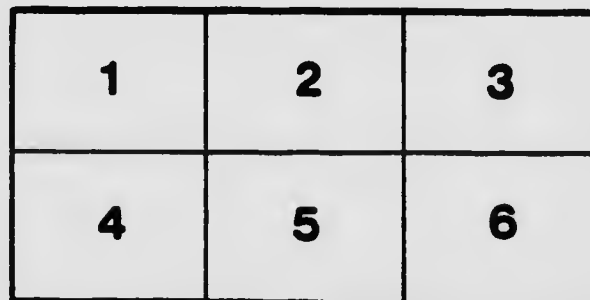
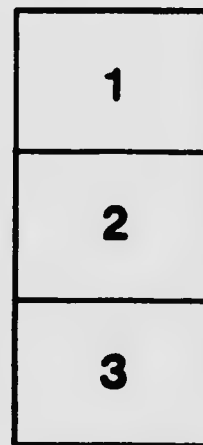
Library of the National  
Archives of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol  $\rightarrow$  (meaning "CONTINUED"), or the symbol  $\nabla$  (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

La bibliothèque des Archives  
nationales du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par la seconde plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole  $\rightarrow$  signifie "A SUIVRE", le symbole  $\nabla$  signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

# Finger Posts

---

## Foreword

1. Hobbies and Such
2. Curiosity Divine

## Man's Attitude to Nature

1. Primitive Man
2. The Art of Taming
3. The Æsthetic Sense
4. The Homing Instinct
5. The Young Barbarian
6. One Touch of Nature
7. Knowledge Its Own End
8. Mammon Worship
9. Humanity's Burden

10. Education of Nature
11. Progress and Stagnation
12. Pleasure and Profit
13. All is Beauty
14. Original Research
15. Thinking God's Thoughts
16. Nature's Master Poet
17. Elixir of Youth
18. Leading a Double Life
19. Miracle of Spring
20. Grass of Parnassus

# Nature Study

---

## Foreword

When I was asked to give an address to the Teachers' Association, I very gladly caught at a hint from the Committee that my paper need not be of a technical character, but might give the audience a chance to unbend from pedagogical labours in order to sit at ease or take a forty-minute nap. That was why I chose a subject having nothing to do with my work as a teacher, but simply a hobby or holiday recreation.

My friends—that is the inner circle who are privileged to tell me unpleasant home-truths—often explain

this hobby of mine as a case of arrested development, like playing marbles, reading fairy tales, or dabbling in money after one is grown up. I have no doubt they are quite right, but all their ridicule has never given me a single qualm of conscience or led me for more than a moment to doubt my sanity. That of course is the way with all lunatics, they think it's the other fellow who is wrong; they'll cheerfully agree with you that it's a mad world, but they think you are barking up the wrong tree and had better come to heel and keep your charity at home.

Ages before Aesop fabled Dan Reynard losing his brush in a trap and trying to create a bob-tailed vogue among his brother foxes, men have desired to whitewash their scibles and faults and make a virtue of necessity. This paper is a sort of apology or justification for my way of life.

Those who think I take my hobby horse too seriously are quite mistaken; they've got hold of the wrong end of the stick; it's my hobby that takes me too seriously, and when it runs away with me I'm as helpless as John Gilpin.

It's nearly 50 years ago now since we first became acquainted, and the better I came to know my hobby the more I learned to trust its wisdom and guidance. That's usually the way with horses; their silence as you might suspect is in itself a proof how thoughtful they are, and their actions are even more eloquent of sagacity than any human tongue could be.

There are several examples in the world's history of wise horses that have given counsel to men; there was Pegasus, the famous winged horse, and Cheiron the Centaur, (though he was only half a horse); there were the Houyhnhnms that Lemuel Gulliver tells of meeting in his travels, and there was the horse little Diamond was named after in George Macdon-



ald's story "At the Back of the North Wind."

You mustn't of course think of a hobby horse as a piece of dead wood like a towel horse or a saw horse. I assure you mine is a real live hobby full of horse sense and ripe experience. For years I have made a practice of sharing my troubles with it and consulting it in all my difficulties; it always looks on the bright side of things and that is one reason why it has always been so helpful.

A great part of this very paper is not mine, but what my hobby has told me confidentially in answer to a whole string of questions I put to it only last week.

The questions were asked at random and that is why my paper is more a series of topics loosely strung together than a single essay of orderly form. It's really a breezy jaunt in the open, just enough to blow some of the cobwebs away; a scamper with my hobby over the moorlands of fancy; for, though this horse of mine is in the main a slow-paced ambling pad—warranted safe for ladies and children—it **will not keep** to a uniform speed, and has a nasty bad habit of getting over fences into ditches and swamps and fields and woods when you want it to jog along the turnpike road.

What is Nature Study?

Nature Study, as I take it, means just studying through eye and ear to gratify the divine curiosity inborn in the human heart about the rest of God's creatures; especially those fellow-creatures who share with us the mysterious heritage of life, be they rooted in the ground like plants or free to roam the earth like ourselves; be they insects that creep or fly, be they birds of the air or beasts of the field, fish, flesh, fowl, or good red herring.

As to whether it is a science or just a recreation depends entirely on how much curiosity we have; and the

direction in which our interest lies will determine the kind of Science or Recreation that Nature Study will mean for us. One point at least is worth noting; this definition practically restricts the subject to living things. I don't mean to ignore the inanimate and inorganic parts of creation; I merely mean that in my own experience things without life have attracted me very little, and I believe this limit of interest will be found common among both children and adults.

With the question whether Nature Study should be taught in schools, I have nothing to do; this cobbler sticks to his last. One thing I know is, that all the years I was a boy at school I never took a lesson in Science, and since I became a teacher I have never taught a lesson in Science. But before I was three years old—so my elders and betters have assured me—this same curiosity about Nature got going at a furious pace, and it's going strong still, like Johnny Walker, with me after it.

It's an interesting question how much in the education of any adult is acquired at school; no doubt the amount varies considerably, but I fancy it would be a generous concession if we allowed about one-tenth to the class-room; the rest comes to us outside, and in all the best of our culture- and character-building we are entirely self-taught. You may lead a horse to the water, but you can't make him drink; just as moral reform or improvement must be built up on a foundation of self-respect, so in things intellectual we cannot be taught unless we are willing to learn. However all this is neither here nor there; the point I wish to emphasize is that not one jot or tittle of Natural History came to me from Teachers or from School Studies.

And now, if you please, I'll just mount my hobby and put him through some of his paces before you; it's

quite certain he won't stick to either highway or bridle path, and more than likely he'll run away with me before we're through.

### **Man's Attitude to Nature**

In the days when they were first learning to brush their hair and trim their nails, to wash and dress, and send themselves to school, we find them living a very simple life, and if we observe their ways we cannot help remarking how much more closely they lived in contact with Nature and in obedience to Natural laws than we do in these great black blotches on the face of Mother Earth that we honour with the name of cities. By natural laws at this early epoch I mean physical laws rather than moral or spiritual.

The struggle for existence was a combat with Nature, and man appears early to have seen that there were two methods of fighting, the direct and the indirect; natural forces must be resisted, or controlled; it is this latter method, in which the powers of Nature are compelled to serve man that I would ask you to consider.

Man's power of taming living creatures to help him in his struggle for existence is almost unique; certainly not but social animals (the ant is a case in point) seem intelligent enough to make others help them; though many creatures have learned how to live at the expense of their fellows, the degenerate things we term parasites.

If we could pay a visit to one of our primitive ancestors, *he* would no doubt be surprised to see *us* with our new-fangled war paint and glad rags, but I doubt if his surprise would be a patch upon ours. As we drew up to his one-roomed mansion of mud, we'd see no pasture, no orchard, no stables, stalls, pens, coops, dovecots, kennels or cages, no sound or sight or sign of domestic animals, for

everything at present was wild, even the old gentleman himself. You might perhaps catch a glimpse of a creature like a jackal or a coyote sneaking off into the edge of the clearing; for the dog, man's earliest conquest, probably first came prowling like a fox about human habitations, to see what he could pick up. If he did first come like a thief or a tramp to our back door, we soon made him work for his living by fetching and carrying, and helping us in our earliest callings of hunter, herdsman and farmer.

The things man has tamed are, chiefly, four-footed animals, birds, and—plants, for we must not forget that once there were no gardens and no plants but wild ones. In this truth lies much food for thought; for some of man's first tame things were evidently sought because they were pretty or playful; in other words man had very early an aesthetic sense, a love of beauty and of other things that cannot be taken to market and bartered for money. In most books of science we are taught to regard our far-off ancestors as hard, selfish creatures with a super-Scottish quasi-Aberdonian eye to the main chance. But there's another side to that; it's quite likely, for instance, that the first puppies were brought home by man from the chase because (as we should say) they were so 'cute, and these proved so tractable that they became man's trusted companion and friend. Believe me, it was no economic venture. Browning somewhat doubtfully represents the primitive savage in Caliban taming creatures from his love of power. Far more probably, Julius Caesar, the first Roman of a scientific habit of mind, tells us a curious thing about our British forbears: he says they kept geese and hares (he probably means ducks and rabbits) for pleasure' sake—that is, as pets. Certainly if many of our quadrupeds were kept for pro-

fit, the same cannot be said of most of our tame birds, which were caught for delight in their bright plumage or sweetness of song; nor will it begin to explain the mystery of the garden, for you must remember that the flower garden is older than the kitchen garden, and even in this dreary economic age of ours, civilized man—if his garden is very small—makes sure of his flower-beds first, and then his cabbages, onions and carrots.

Man's first garden was certainly a pleasure ground, a little space beside his hut where the bright and curious flowers he met in the woods might be brought to live beside him. The things that persist most stubbornly in the teeth of adverse circumstance are surely the things that came first; I take it, man's desire to-day to have parks and flower-beds in the heart of his modern cities, and the slum-dweller's carefully watered window-pots of geraniums and fuchsias hark back to the dawn of human life. You remember Tim Linkinwater's account to Nicholas Nickleby of his poor neighbour, his story of the tulips in the old blacking-bottles; and surely no other theory can explain the miracle that happened to Poor Susan, Wordsworth's peasant in London, when she heard the song of a caged thrush.

'Tis a note of enchantment; what ails  
her? She sees

A mountain ascending, a vision of  
trees;

Bright volumes of vapour through  
Lothbury glide,

And a river flows on through the  
vale of Cheapside.

Green pastures she views in the  
midst of the dale,

Down which she so often has tripped  
with her pail;

And a single small cottage, a nest  
like a dove's,

The one only dwelling on earth that  
she loves.

She looks, and her heart is in heaven:  
but they fade,  
The mist and the river, the hill and  
the shade;  
The stream will not flow, and the  
hill will not rise,  
And the colours have all passed away  
from her eyes.

Stone walls do not a prison make,  
and all the masonry of modern Baby-  
lon cannot thwart the homing instinct  
of the human heart. This of course  
was the reverie of a country-bred  
peasant; what of the city merchant?

Behold the vision of a business  
man just back from his holiday:—

Tangled in stars and spirit-steeped  
in dew,  
The city worker to his desk returns,  
While 'mid the stony street remem-  
brance burns,  
Like honeysuckle running through  
and through  
A barren hedge. He lifts his load  
anew,  
And carries it amid the thronging  
ferns,  
And crowding leaves of memory,  
while years  
Above him once again the open blue.

His letter-littered desk goes up in  
flowers;  
The world recedes, and backward  
dreamily  
Come days and nights, like jewels  
rare and few,  
And while the consciousness of those  
bright hours  
Abides with him, we know him yet  
to be  
Tangled in stars and spirit-steeped  
in dew.

So long as these miracles befall in  
the wilderness of our industrial cen-  
tres, all's right with the world, and  
we have strong proof besides that it  
has been so from the beginning.

All living creatures delight in their  
own activities; man, more observant

still, takes pleasure in the rest of created things as well as in himself, and further, as I firmly believe, when the primeval savage felt his heart go out in sympathy with the beasts of the field, the fowls of the air and the flowers of the wayside he bore unconscious testimony to the universal kinship of Nature.

Perhaps to many of you it seems a far cry to the life of primitive man thousands of years ago, or at least, thousands of miles away in equatorial Africa or the tropics of America. But don't forget that here too as in most other things, the past is right at our door. The ways of the young barbarians in our midst are a living proof of savage life and nature. An often-quoted line of Wordsworth declares the child the father to the man, but modern science maintains something far more wonderful than this: that the child is not only father to the man, but actually man's primitive ancestor. The student of Embryology knows that in its earlier stages the human organism shows man's kinship with lower forms of life; and we know ourselves by simple observation that a child passes only by painful progress from all-fours to the erect attitude, from infancy to articulate speech; and still more painfully does he learn to count, to read and to write. If the child has to learn all these things, they cannot be instincts, but must have been discovered or invented by primitive man; in short, the child's development is an epitome of man's history from brutish barbarism to 20th century civilization.

Just consider the ways of these little ones, and see if we can't get an answer to our question how primitive man lived and whether he took delight in the world of Nature.

The question has sometimes been debated whether our earliest adventurers turned towards the pole or towards the equator, northward or into the tropics; in point of fact, the

first voyage of discovery is a child crawling across the nursery floor; this is soon followed by the more daring feat of exploring some passage that opens — miles away — into the kitchen, say; or of climbing a staircase into the attic; some of the most momentous discoveries made on these travels, as I seem to remember, were various insects like spiders and cockroaches, centipedes and sow-bugs, or house-flies on the window pane that lead a somewhat precarious existence in our midst.

We used to hear much, in the newspapers, of the open door as affording us westerners easy access to the Orient;—with the view, I suppose, of outwitting the Oriental, to the mutual advantage of our pocket and his experience; but the open door of magic import is that by which we first escaped from the house to the garden—that paradise of wonders, unsurpassed till we were admitted to fairyland itself, and allowed to go at large in the world of God's out-of-doors, wandering at will through lanes and woods and fields.

Primitive man knows little of the doctrine of altruism; Caliban seldom cudgelled his brains about his neighbour's welfare; on the other hand, what phrenologists would call his bump of acquisitiveness is very prominent; and so, in the child, the selfish desire to possess the objects of attraction is very strong; the child must have domestic animals of his own, he must have pets, he will even tame wild creatures for himself; he must have a little garden of his own; he makes collections of things; whatever he sees, he covets;—sometimes, it is said, these childish traits of character have been found in the adult. Grown men have been known to collect butterflies and beetles and ferns and things of that sort.

“But we are neither children nor savages,” you retort; “the race has outgrown this primitive habit, and as



for us—we have put away childish things." I am sorry for you if a love of Nature is one of the childish things you have put away; it means you have lost touch with a great part of the world you were born into, are out of sympathy with your fellow-creatures, the rest of creation.

I heard a thousand blended notes,  
While in a grove I sat reclined,  
In that sweet mood when pleasant  
thoughts  
Bring sad thoughts to the mind.

To her fair works did Nature link  
The human soul that through me  
ran;  
And much it grieved my heart to  
think  
What man has made of man.

Through primrose tufts in that green  
bower,  
The periwinkle trailed its wreathes;  
And 'tis my faith that every flower  
Enjoys the air it breathes.

The birds around me hopped and  
played,  
Their thoughts I cannot measure.—  
But the least motion which they made,  
It seemed a thrill of pleasure.

The budding twigs spread out their  
fan  
To catch the breezy air;  
And I must think, do all I can,  
That there was pleasure there.

If this belief from heaven be sent,  
If such be Nature's honest plan,  
Have I not reason to lament  
What man has made of man?

It is, I am afraid, true that many of us cease to take an interest in the world of Nature after we grow up, and there seems no doubt that the conditions of modern life are in many ways antagonistic to such a love:—

The world is too much with us; late  
and soon,

Getting and spending, we lay waste  
     our powers;  
 Little we see in Nature that is ours;  
 We have given our hearts away, a  
     sordid boon!  
 This sea that bares her bosom to the  
     moon;  
 The winds that will be howling at all  
     hours,  
 And are upgathered now like sleep-  
     ing flowers;  
 For this, for everything we are out  
     of tune;  
 It moves us not.—Great God! I'd  
     rather be  
 A pagan suckled in a creed outworn,  
 So might I, standing on this pleasant  
     lea,  
 Have glimpses that would make me  
     less forlorn;  
 Have sight of Proteus rising from  
     the sea;  
 Or hear old Triton blow his wreath-  
     ed horn.

However, I do not believe it in-  
 evitable or even normal for the adult  
 to lose his childish love of living  
 things; the sense of their freshness  
 doubtless fades unless we have some  
 sort of stimulus to revive our interest  
 from time to time; but I am convinc-  
 ed that the love of Nature is too  
 deep-rooted to be dead, and a little  
 effort on our part, some patient en-  
 deavour, will re-awaken it.

Is it worth making the effort, you  
 say? May I answer by using a  
 Scotchman's privilege of asking an-  
 other question? Isn't it our duty to  
 learn all we can about God's crea-  
 tures throughout the world into  
 which we have been born? Nature  
 Study, on one side, is a branch of  
 knowledge, and should like virtue be  
 regarded as its own reward. I hold  
 very strongly the view that know-  
 ledge is an end in itself quite apart  
 from any advantage, material or  
 other, that may accrue in the pursuit  
 of it.

Such a view of knowledge is al-  
 together too much neglected in these

days, and should be an article of faith in every civilized nation as in all educated circles. I believe when the historian or philosopher of the future comes to estimate the achievements of our day—especially of the English-speaking nations—it will be more clearly seen how harmful to growth and progress, individual and national alike, has been the overwhelming importance we attach to wealth and material prosperity. Napoleon is said to have sneered at the English as a nation of shopkeepers, but what will be said of their descendants, with our apotheosis of millionaires? To become rich is not a worthy ambition either for a man or for a race; wealth is far from being the highest aim in life and should never be more than a means to an end. What makes the history of ancient Greece a living force to-day is the grandeur of thought and nobility of purpose—the lifelong search for truth, and truth for its own sake—among its great men; even in the middle ages it has been constancy of purpose in the pursuit of knowledge that has made individual names and personalities shine forth from the darkness of night. In our own day the neglect of Nature in education has been deplored by Herbert Spencer; and Huxley in a powerful essay, under the similitude of a chess-match, has arraigned our modern education before the bar of common sense. A few years ago, Sir Wm. Ramsay, speaking to a London audience of some 4,000 persons on the nature and properties of radium, closed his experimental demonstrations with some such words as these:—"What is the use of it all, you may ask; how far it may prove useful in the healing of certain diseases is not yet certain; but it is surely something to learn the laws of Nature and, as it were, to think the thoughts of God."

For us who have deliberately chosen the path of guiding the younger

generation towards good citizenship, who are trying to make them cheerful and contented as well as self-reliant and intelligent, conscientious as well as efficient, it is peculiarly the duty to set before ourselves as before them some more distant goal, some higher ideal than mere material prosperity.

You may be sure we were not brought into a world of such wonderful beauty, made lords of a creation infinite in variety, unless God meant us to learn something about the creatures that share with us the mysterious heritage of life. I believe it to be nothing short of a **religious** duty for us all to find out something about our natural surroundings; no one can say how tremendous is the influence upon us of the world of Nature, an influence that has been moulding us physically for untold ages by atmosphere and light, by countless conditions of soil and climate, and that presses in on the individual life constantly and on all sides from the hour of our birth to the day of our death; at no point is it absent, we find it at every step we take between the cradle and the grave.

You may think it nothing but a Poet's beautiful fancy, yet I firmly believe there is far more truth than the world has ever learned to admit in Wordsworth's Education of Nature; surely the poet's own life and heart have gone far to prove its truth to the English nation, as Archibald Lampman's have to us in Canada; Dame Nature herself is speaking:

Myself will to my darling be  
Both law and impulse; and with me  
The Girl, in rock and plain,  
In earth and heaven, in glade and  
    bower,  
Shall feel an overseeing power  
To kindle or restrain.

She shall be sportive as the fawn  
That wild with glee across the lawn  
Or up the mountain springs;

And hers shall be the breathing balm  
And hers the silence and the calm  
Of mute insensate things.

The floating clouds their state shall  
    lend  
To her; for her the willow bend;  
Nor shall she fail to see  
Even in the motions of the Storm  
Grace that shall mould the Maiden's  
    form  
By silent sympathy.

The stars of midnight shall be dear  
To her; and she shall lean her ear  
In many a secret place  
Where rivulets dance their wayward  
    round,  
And beauty born of murmuring  
    sound  
Shall pass into her face.

Science tells us that every living thing adapts itself to its surroundings, and what is true of things lower in the scale than ourselves is equally true of human beings, but with one remarkable difference. Among other creatures the circumstances that lead to modification and adaptation are wholly physical and external; change the habitat of any plant or animal and if it is to survive it must and does undergo change of form and habits till it meets the requirements of its altered conditions, but as soon as that point is reached all change ceases; with man it is very different, there is no point in life where the individual is forced to cease from progress and development. One of the great boons of self-consciousness is this that it enables us to advance almost without limit in any desired direction, simply by applying to ourselves (through an exercise of will) an artificial stimulus or goad. And that is what I meant some time ago by insisting that the most valuable part of each one's education was self-acquired, that we were self-taught. It does not mean, of course, that man has ceased to obey the great law of adaptation to environment—

that law is of endless application; what it does mean is that the physical circumstances which among other animals are of supreme importance, are of only secondary import to man, while a new set of circumstances that play little or no part in the development of the lower animals has become to us of overwhelming force—the moral, intellectual, and spiritual atmosphere in which we live and move and have our being. These conditions of human life it is that urge us onward and upward, inspiring each of us (often from within) to continual effort, and stimulating mind and will afresh even when weariest and most dejected. This is self-education.

That we are still none the less animals is unhappily abundantly evident (to take but a single illustration) in the tendency with every one of us to cease all effort in life when once we have hollowed out for ourselves a comfortable groove in which to nestle down and go to sleep. But we have no right to stagnate, and though history shows us that the vast majority of races in the world have been unprogressive, though it were to be proved that the vast majority of individuals in every nation are unprogressive, it would still be wrong for us to stagnate. If all living things on earth are one in origin, as the Theory of Evolution teaches, how but by continual effort have we fought our way (to speak in a figure) from the slime of the river-bed through swamp and jungle and forest, where all other creatures are still blindly groping, and why have we been allowed to win to the vantage-ground we stand on, from which we, and we alone, can survey the course we have traversed, if we were not intended to use the gift of self-conscious reasoning and learn all we can of the world in which we live and of the phases through which we have passed in our upward struggle?

I am afraid my hobby-horse has been running away with me. Suppose we return to the highway.—Nature Study is not only a Science and as such a perfectly proper subject of enquiry; it is also a recreation and a pastime. Let me piece out some of the pleasures and benefits that have come into my life through this pursuit of Natural History:

It has quickened the sense of observation and made every path in God's out-of-doors alive with beauty and interest.

It has enabled me to do work along the lines of original research and make several independent discoveries in the *flora* and *fauna* of the Dominion of Canada.

It has given me a wealth of material through eye and ear for reflection and meditation, inference and deduction, the perception of relations in Nature, systems of classification, whole processes of scientific thought.

Through the study of Beasts, Birds, Insects, and Plants, it has helped me to approach with interest and understanding the masterpieces of Biological Theory associated with such names as Darwin, Wallace, Huxley, Lubbock, Romanes, Grant Allen, Morgan, Weismann, De Vries and Bergson.

It has transformed whole shelves of popular books on Natural History into a series of thrilling romances, from White's Natural History of Selborne and the works of Rev. J. G. Wood and Richard Jeffries, to Thoreau, Lowell, and John Burroughs, or the latest animal stories of Kipling, Thompson Seton, Roberts and Long.

It has helped me to throw off the cares and worries of a most wearing profession, and by outdoor recreation of a thoroughly healing and wholesome kind to repair the ravages of the schoolroom. By drawing the mind outward through the bodily senses, it has made morbid introspection a physical impossibility, and —

like the fleas in David Harum's scheme of canine creation—it has kept me from brooding over the fact that I am a mere dog of a teacher.

Inmeasurably more than all this, it has enabled me to know and love the inspired verses of the greatest Nature poet in the world—William Wordsworth. How often and often have I found in his poetry a language for my thought and even for those inarticulate cries of the spirit, the vague feelings and elusive fancies that break through language and escape. More and more, as the seasons come round, has the influence of natural objects become a power in my soul. Nature still remains all in all to me and her manifestations are a passion and an ecstasy; the sense of mystery and magic will not pass; only what in youth were simple sense impressions have now become bound up with my very being; the human soul that through me runs is linked with all created things, so that to me the meanest flower that blows can give thoughts that do often lie too deep for tears.

— “For I have learned  
To look on Nature, not as in the hour  
Of thoughtless youth; but hearing  
oftentimes  
The still sad music of humanity,  
Nor harsh nor grating, though of  
ample power  
To chasten and subdue. And I have  
felt  
A presence that disturbs me with the  
joy  
Of elevated thoughts: a sense sublime  
Of something far more deeply inter-  
fused,  
Whose dwelling is the light of setting  
suns,  
And the round ocean and the living  
air,  
And the blue sky, and in the mind of  
man:  
A motion and a spirit, that impels



All thinking things, all objects of all  
thought,  
And rolls through all things."

Not only has it prevented me from growing up—into a vicious money-grubber, perhaps, or a speculator, but it has made it impossible for me ever to grow old; it is well-known that naturalists never age, because, though they have a keen sense for the seasons, they are not conscious of the passage of time; I have known a dozen or more in a single society—of which I happen to be a member—over 80 years of age, and they still forget to take breakfast or put their hats and coats on when they go out for a day's tramp—just like a troop of little boys.

Without fear of detection and almost without reproach, it has enabled me, for more than 40 years to lead a double life: 24 months full of activity in every 12 of the calendar; first, a year from January to December when I read books, work at my profession, and engage in friendly intercourse with my fellow-men; second, from Spring to Winter, a procession of seasons in which New Year's day is at Eastertide, when all Nature rises from the dead and we behold as it were a new earth and a new heaven bodied forth before our eyes, a season in which our forbears' myth of Balder the Beautiful, and the Eastern mysteries of Adonis and Osiris find their origin and explanation; till at last the coming of the birds and the springing of the flowers, the miracle of Spring and the pageant of Summer have come to haunt me like a passion far beyond words of mine to express:—

A little sun, a little rain,  
A soft wind blowing from the west,  
And woods and fields are sweet  
again,  
And warmth within the mountain's  
breast.

So simple is the earth we tread,  
So quick with love and life her frame,  
Ten thousand years have dawned and  
fled,  
And still her magic is the same.

A little love, a little trust,  
A soft impulse, a sudden dream—  
And life as dry as desert dust  
Is fresher than a mountain stream.

So simple is the heart of man;  
So ready for new hope and joy;  
Ten thousand years since it began  
Have left it younger than a boy.

And lastly, it has set up in my life  
a wonderful web of curiously inter-  
woven threads of association and mem-  
ory, that touch on a thousand  
points of time and space, and draw  
from all directions to a centre of  
inner consciousness where they merge  
in quiet harmony. I will give you a  
single illustration.—

When I was a very little boy, I was  
taken out one day for a drive to Glen  
Almond in Perthshire (the scene of  
Ian MacLaren's "Drumtochty").  
Growing in the spongy bog moss  
among the heather, I noticed a beau-  
tiful flower (several of them here and  
there in a scattered group), a flower  
like a white buttercup or a large  
anemone, erect and graceful, a soli-  
tary bloom on each slender stalk,  
springing from a tuft of leaves in  
the sphagnum. I had never seen such  
flowers before and gathered a bunch  
to take home; when I looked closely  
into the flower I found it a wide open  
saucer of white petals delicately vein-  
ed with a tracery of green; at its  
heart was a tiny ring of golden knobs.  
It proved a plant of so moisture-lov-  
ing a habit that the flowers had  
drooped and faded long before I got  
them home; there, no one could tell  
me what they were. In later years  
I found them once or twice in simi-  
lar haunts on Sherriffmuir just back  
of Wallace's Monument, so that they  
grew to be like old friends of sweet

memories; but I knew no botany and none of my companions could tell me their name; I well remember about 25 years ago, when I was making a last visit to my old home in Scotland, before coming to Canada, how I tramped alone to Glen Almond for a day among the hills; while crossing a stretch of moss by a tributary of the Almond I was suddenly halted by the sight once more of these old friends, the mysterious white flowers of my childhood; what a flood of memories they overwhelmed me with, you may well imagine, but still I was as helpless as the child of 15 years before to place them in Nature or give them a name.

When I came out to Canada, I found myself indeed a stranger in a strange land; the beasts of the field, the fowls of the air, the flowers of the wayside, and even the insects, were all different; and I realized for the first time with crushing force what Nature had come to mean in my life: I must re-create for myself a world of nature in which all was familiar, and loved because familiar, or starve in the midst of plenty. At 25 I had to begin life all over again. I set to work at once and got a botanical key, which very soon I found myself able to use. In three years I was on nodding terms with nearly all the flowers of Ontario and could identify any stranger by the use of my key.

More than 15 years ago now, while roaming along the cliffs overlooking Lake Ontario, just west of Port Hope, I came upon a little spring in the grassy bank; and there, among Fringed Gentians and the Large Blue Lobelia, in the spongy turf at the other side of the little runnel, like a band of travellers waiting to drink at a wayside well, stood grouped a little colony of my old friends of the Scotch hills; a score of years seemed to fall from my back like a burden, 3,000 miles of ocean shrank to a little stream of living water; a single

step and I was a boy in Scotland once again; then I took out my botany and the mystery was solved—it was the Grass of Parnassus, and I tell you that's only one of a hundred visions that, so long as I tread this earth of ours, can never fade into the light of common day. •



