THE OUTLOOK TO NATURE

L. H. BAILEY

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By

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TO

My Father

WHOSE MORE THAN FOUR-SCORE YEARS
HAVE BEEN LIVED ON THE FARM
— NATURALIST WITHOUT KNOWING IT —

I dedicate this book

THIS book contains four lectures given in the Colonial Theatre, Boston, as a part of the University Course, under the auspices of the Education Committee of the Twentieth Century Club. The lectures were delivered in January, 1905, although scheduled for a year earlier. Parts of the fourth lecture once appeared in "The Independent."

ITHACA, N. Y.,
MARCH 1, 1905

THE LECTURES

OUTLOOK TO NATURE

I

The Realm of the Commonplace

NOT long ago, I sat at the window of a hotel chamber, looking down a thoroughfare of a great city. I saw thousands of human beings pouring in and out, up and down, as if moved by some relentless machinery. Most of them were silent and serious and went quickly on. Some sauntered, and returned again and again as if looking for something that they did not expect to find. Carriages went up and down in endless pageant. Trolley-cars rushed by, clanging and grinding as they headlonged into the side streets. Meretricious automobiles with gorgon-eyed drivers whirred into the crowds, scattering the street

crossers. Men passed with banners and advertising placards. Women paraded with streaming headgear and tempestuous gowns. A resplendent trumpeter rolled by in a tallyho. A hundred other devices to attract the eye and distract the ear came out and vanished; and yet no one stopped and no one seemed to care. Now and then I saw a knot of men form, as some one fell or as wagons collided; but the knots as quickly dissolved, and I saw that they were made up of the idle who were amused for the moment and then floated on hoping for fresh entertainment. A hurdy-gurdy attracted only a bevy of scurrying children. A little girl with armful of newspapers moved in and out unnoticed.

Suddenly a dog leaped down a flight of steps and was followed by two little children laughing and screaming. The dog felt his freedom and the children

were in pursuit. The crowd stopped; the stern-faced men with high hats stopped; the well-dressed women stopped. Even a cabby pulled up his horse as the children dashed on the pavement after the escaping dog. Back and forth the children ran. On the far side of the street the people halted and took their hands out of their pockets. The children caught the dog and bundled it lovingly into the house; the crowd applauded, and dispersed.

Every person seemed to be surprised that he had stopped. From my height I thought I could discern the reason for this curious phenomenon: in all the blare and blazonry of that tumultuous thoroughfare, this was the only episode of real spontaneous and unaffected human nature. All else was a kind of acting, and every person unconsciously recognized that it was so. I thought how rare

must common naturalness be and how much has it been driven from our lives!

If a person has given any serious thought to public questions, he has his own contribution to make as to the causes of present conditions and the means of bettering them; so I make mine: what is now much needed in the public temper is such a change of attitude as will make us to see and appreciate the commonplace and the spontaneous, and to have the desire to maintain and express our youthful and native enthusiasms. And it is my special part to try, so far as possible, to open the eyes and the heart to nature and the common-day environment. My point of view is, of course, that of the countryman, and no doubt it has the countryman's bias.

So great has been the extension of knowledge, and so many the physical appliances that multiply our capabilities,

that we are verily burdened with riches. We are so eager to enter all the strange and ambitious avenues that open before us that we overlook the soil at our feet. We live in an age of superlatives, I had almost said of super-superlatives, so much so that even the superlatives now begin to pall. The reach for something new has become so much a part of our lives that we cease to recognize the fact and accept novelty as a matter of course. If we shall fail to satisfy ourselves with the new, the strange, and the eccentric, perhaps we shall find ourselves returning to the old commonplace and the familiar, and perhaps we shall be able to extract new delights from them because of the flights we have taken. Perhaps in their turn the commonplaces will be again the superlatives, and we shall be content with the things that come naturally and in due order. Certain it is that every sen-

sitive soul feels this longing for something simple and elemental in the midst of the voluminous and intricate, something free and natural that shall lie close to the heart and really satisfy our best desires.

It is not likely that we shall greatly simplify our outward physical and business affairs. Probably it is not desirable that we should do so, for we must maintain our executive efficiency. We have seen a marvelous development of affairs, expressed in the renovation of a hundred old occupations and the creation of a thousand new ones. Most of these occupations and businesses are clear gain to the world, and we may expect them to endure. This rise of affairs has emphasized the contrasts of business and of home. Machinery and complexity belong to affairs; but a simpler and directer mental attitude should belong to our

personal and private hours. Perhaps our greatest specific need is a wholesome return to nature in our moments of leisure,— all the more important now that the moments of leisure are so few. This return to nature is by no means a cure-all for the ills of civilization, but it is one of the means of restoring the proper balance and proportion in our lives. It stands for the antithesis of acting and imitation, for a certain pause and repose, for a kind of spiritual temper, for the development of the inner life as contrasted with the externals.

The outlook to nature is, of course, the outlook to optimism, for nature is our governing condition and is beyond the power of man to modify or to correct. We look upward and outward to nature. Some persons have supposed, however, that the "contentment" preached by the nature-lover implies unvexed

indifference to the human affairs of the time, and that therefore it makes for a kind of serene and weak utopianism; but, to my mind, the outlook to nature makes for just the reverse of all this. If nature is the norm, then the necessity for correcting and amending the abuses that accompany civilization becomes baldly apparent by very contrast. The repose of the nature-lover and the assiduous exertion of the man of affairs are complementary, not antithetical, states of mind. The return to nature affords the very means of acquiring the incentive and energy for ambitious and constructive work of a high order; it enforces the great truth that, in the affairs of men, continued progress is conditioned upon a generous discontent and diligent unrest.

By nature, I mean the natural out-of-doors,—the snow and the rain, the sky, the plants, the animals, the running brooks,

and every landscape that is easy of access and undefiled. Every person desires these things in greater or lesser degree: this is indicated by the rapidly spreading suburban movement, by the vacationing in the country, and by the astonishing multiplication of books about nature. Yet there are comparatively very few who have any intimate contact with nature, or any concrete enjoyment from it, because they lack information that enables them to understand the objects and phenomena.

The currents of civilization tend always to take us out of our environment rather than to fit us into it. We must recast our habits of thought so as to set our faces nature-ward. This is far more important than any effort at mere simplicity or toward lopping off the redundancies: it is fundamental direction and point of view.

The outlook to nature is the outlook to what is real, and hearty, and spontaneous.

Our eager civilization prematurely makes us mentally old. It may be true that the span of man's life is increasing, but at twenty we have the knowledge and the perplexities that our grandfathers had only at forty. Our children may now be older when they are graduated from school, but the high school course of to-day is more complex than was the college course of fifty years ago. All this has a tendency to lessen the years of free and joyous youth. You have only to see the faces of boys and girls on your city streets, to discover how old the young have grown to be. In home and school our methods have been largely those of repression: this is why the natural buoyant outburst that I saw on the city thoroughfare challenged such instant attention and surprise. We need to emphasize the youthful life.

Therefore, I preach the things that we

ourselves did not make; for we are all idolaters,—the things of our hands we worship. I preach the near-at-hand, however plain and ordinary,—the sky in rain and sun; the bird on its nest and the nest on its bough; the rough bark of trees; the frost on bare thin twigs; the mouse skittering to its burrow; the insect seeking its crevice; the smell of the ground; the sweet wind; the leaf that clings to its twig or that falls when its work is done. Wisdom flows from these as it can never flow from libraries and laboratories. "There be four things," say the Proverbs, "which are little upon the earth, but they are exceeding wise:

"The ants are a people not strong, yet they prepare their meat in the summer;

"The conies are but a feeble folk, yet make they their houses in the rocks;

"The locusts have no king, yet go they forth all of them by bands;

"The spider taketh hold with her hands, and is in kings' palaces.'

WHAT LITERATURE CAN DO FOR US

Some of us do not enjoy nature because there is not enough sheer excitement in it. It has not enough dash and go for this uneasy age; and this is the very reason why we need the solace and resource of nature so much. On looking over the lists of Christmas books I was surprised to find how often the word "sensation" occurs. In the announcement of the forthcoming number of a magazine, I find twenty articles, of which at least nineteen are to be "tragic," "thrilling," "mystery-laden," or otherwise unusual. The twentieth one I hope to read. One would think that a piece of writing is valuable in proportion as it is

racy, exciting, startling, astounding, striking, sensational. In these days of sensational sales, to have a book sell phenomenally well is almost a condemnation of it. An article or book that merely tells a plain story directly and well is too tame; so even when we write of nature we must pick out the unusual, then magnify and galvanize it. From this literature the reader goes out to nature and finds it slow and uninteresting; he must have a faster pace and a giddier whirl of events. He has little power to entertain himself; and, his eyes never having been trained to see what he looks at, he discovers nothing and the world is vacuous and void. He may find temporary relief in some entertainment provided for him out of hand, as the so-called news of the newspapers or some witless frippery on the stage. Yet, unless all poets and philosophers have misled us, the keenest and

most resourceful delights that men have found have been the still small voices of the open fields.

There is another objection to much of the nature writing,—the fact that it is unrepresentative of nature. It exploits the unusual and exceptional, and therefore does not give the reader a truthful picture of common and average conditions. This has been true to some extent even of text-books,—they choose so-called "typical" forms and structures, forgetting that typical examples exist only in books for purposes of definition. The best nature writing, as I conceive of it, is that which portrays the commonplace so truthfully and so clearly that the reader forthwith goes out to see for himself. Some day we shall care less for the marvelous beasts of some far-off country than for the mice and squirrels and woodchucks of our own fields. If I were a

naturalist, I should go forthwith to study the mice and then write of them for all children; for, of all untamed animals, what ones are known to a greater number of children?—and yet what do the children know except that they have been early taught by their elders to abhor these animals?

The embodiment of all grace and agility, of all quick despatch, of all neat habits and of comeliness, of unseen and devious ways, is the mouse. What other object was ever so swift and silent and graceful as it slides along the corners of your room as noiseless as a shadow! What explorer was ever so successful as it peers into drawers and sniffs in cupboards! A few years ago a mouse was my nightly companion for perhaps a month. He was employed in some great engineering enterprise in the timber work over my chamber. Hour by hour he

alternately gnawed rapidly, stopped, gnawed and stopped again, in regular intermittence. I suppose that in the moments of silence he was listening for eavesdroppers; or perhaps he was resting. He began far at one side of my ceiling and worked steadily toward the center. I wondered what curious plans he had in his head and whether he had calculated on the cost of all his labor. At length the region of his excavations lay immediately over my head, and my interest in him, although he was unseen, became quite unusual. At last he seemed to have made an extra effort, another silence came,—a silence that was never broken. For nights I waited; and to this day I wonder. In my boyhood the field mice were a constant source of entertainment and mystery. I found them scuddled in the corn shocks, burrowed in the dry grass, nesting in the corn-crib. I

saw their faint narrow trails on new-fallen snow, leading into strange pigmy caverns. One winter I helped to fell a tree, in the hollow bole of which we found a full peck of beechnuts neatly shelled and stored against the cold. Let us have the commonplace, for indeed it is rare!

Just now I said something of the "news." It is important that we recur to this subject, since we are a people of news readers, and continuous reading strongly, though silently, influences our outlook toward nature and affairs. Much of what is called news is so unimportant that it is not worth the while of a person whose time is of value; but my chief objection to it, as to some of the nature writing, is that it is no way representative of human affairs,—if it were, I suppose it would not be new and therefore would not be news. It is made up to a

large extent of exceptional and meaningless episodes and extravagancies. Yesterday I saw hundreds of persons on cars and ferries eagerly reading the "news." I bought a paper resplendent with photography and colored ink. The first page had eight articles, seven of which were devoted to cases of divorce, common rascality and crime, and unimportant local accidents, all displayed as if it would advantage a man to read them. Only one article dealt with public affairs, and this was hidden underneath small headlines. The newspaper had no sense of proportion. All the details of a divorce case were given with as much circumstantial minutiæ as if it were of equal importance with a debate in Congress or the deliberations of the international peace conference. As I was about to write these sentences, I chanced to pick up the following editorial paragraph from

a country newspaper (The Seneca Falls, N. Y., "Reveille"):

"The sound and wholesome qualities which make for all that is most prized in life are to be found in the great masses of the people, and are scarcely touched by the currents of the time which make for evil, and with which the news of the day is necessarily so largely concerned. It is not the doings or the ways of the great bulk of the people—those who quietly earn a modest living by ordinary industry—that furnish much material either for news or for comment. We take all that for granted, and when we think of the tendencies of the time, we almost forget its existence. When a touch of nature happens to bring into unaccustomed relief the existence of the homely but sturdy and sterling virtues of the great American people, their right-mindedness and true-heartedness, it is

well to draw from the event the lesson that manhood and merit are after all the things which create the very best character for our country and government."

We gather from this extract the opinion that what we call the "slow" and "dull" may, after all, be the saving strength of the nation. In the hamlets and villages and small country cities, great problems are working themselves out just as effectively as in the mighty cities; and although slowly, or even because slowly, they may be working out more fundamentally than elsewhere. The great mass of mankind is unrecorded and practically unknown. A few of us are actors, and we pass with some noise and flourish across the stage; but the sources of events are behind and beyond. I have heard the saying attributed to a statesman that if the discussions either at the country four-corners or in the president's cabinet were to

cease, it were better to do away with the cabinet. Public opinion does not seem to originate to any extent with the leaders: the leaders are more likely to catch and voice the crystallizing sentiments of the commonplace, originating slowly and perhaps unconsciously with those who work first-handed with the forces that make for wealth.

We might go even farther than the hamlet or the town,—to the family unit on the remotest farm. This unit is considered by most of the other members of the race to be the commonplace of the commonplace; yet, along with the farming, human problems are being worked out. There boys and girls are being reared and even trained, who some day may come to your cities and distance your own sons and daughters; for it is a discouraging fact that, with all we are doing for schooling, merit and efficiency do not

seem to increase in proportion, and those whom we are in the habit of calling uneducated may take the highest prizes that the world has to give. The farm, in its turn, is being exploited in our current literature; and, significantly enough, much of this literature is of the sensational order. Of all things that should not be sensationalized, the farm is the chief. The farm need not be prosaic nor devoid of intellectual interest; but its very spirit is that of stability and constancy. We should develop the ideals in every occupation; but the ideal should follow closely the facts and the spirit of the real. We need to idealize the commonplace, for then we show its possibilities.

We need a new literature of nature and the open country, a literature that shall not be merely and plainly descriptive. We need short, sharp, quick, direct word-pictures that shall place the object

before us as vividly as the painter would outline some strong figure with a few bold strokes of his brush. Every object and every common labor awaken some response beyond themselves, and this response can be set to words. The man employed at useful and spontaneous work is a poetic figure, full of prophecy and of hope. The cow in the field, the tree against the sky, the fields newly plowed, the crows flapping home at night, the man at his work, the woman at her work, the child at its play—these all are worth the stroke of the artist.

I saw a man walking across the fields, with spade on his shoulder and dog at his side; I saw his firm long stride; I saw his left arm swing; I saw the weeds fall beneath his feet; I saw the broad straight path that he left in the grass. There were brown fields, and woods in the first tint of autumn. I saw birds;

and in the distance was the rim of the sky. And beyond him, I saw the open ditch to which he was returning.

With the nature writers I like to include some of the authors who do not write specific natural history topics. If they write from the out-of-doors, with a keen love of it and a knowledge of what it comprises, adding to it touches of good human nature, then they lead men to the open as effectively as those to whom we customarily apply the term "nature-writer." The landscape is as important as any object that it contains, and the human sentiment is more important than either. These writers invariably write the commonplace, and touch it into life and meaning. One of the greatest of these writers, to my thinking, is Stevenson,—simple, direct, youthful, tender and heartsome. His life was with nature; his work touches the cosmic and elemental.

O Stevenson! On far Samoa's tropic shore
You moored your slender bark,
And there in calm secludedness did live
To write the spirit of your gentle soul,
And over all the world to pour
The fragrance from the tropic of your heart.

And thence you passed beyond,—
Passed not with the proud acclaim
Of pageant and tempestuous bells
That drown themselves in blank forgetfulness,—
But fell away as falls the wind at eventide;
And all the trees on all the isles and shores
Bowed their heads in solitude.

NATURE POETRY

I like to think that our nature poetry is also leading us natureward in a very practical way, since it is becoming more personal and definite, and brings us into closer touch with specific objects and demands greater knowledge of them. It has been the progress of our attitude toward nature to add the concrete to the abstract; and this may be expected to proceed so far that every object of the

environment and every detail of our lives will be touched with inspiration. If I cannot catch a note of inspiration from the plainest thing that I touch, then to that extent my life is empty and devoid of hope and outlook. The great voices appealed to the early Greeks,—the thunder, the roaring wind, the roll of the waves, the noise of war; but we do not know that the shape of the leaf, and the call of the young bird, and the soft gray rain, appealed much to them. The Greek lyrics are mostly personal or personifying, and lack any intimate touch with the phases of natural phenomena. As men have come more and more to know the near-at-hand and the real in nature, this knowledge has been interpreted in the poetry; for poetry always reflects the spirit of the time. All English poetry illustrates this general tendency; but what we are in the habit of

calling "nature poetry" is of comparatively recent growth. It is to be hoped that we shall never have less nature poetry that expresses the larger moods; but we must have more that is specific and concrete in natural history details, and which will still be poetry, for the race is coming nearer to the environment in which it lives. The individual seems sometimes to recapitulate the experience of the race; as each of us grows old and conventionalities lose their meaning and the small voices make a stronger appeal, we are conscious that we have had Wordsworth's experience:

> "In youth from rock to rock I went,
> From hill to hill in discontent,
> Of pleasure high and turbulent,
> Most pleased when most uneasy;
> But now my own delights I make,—
> My thirst from every rill can slake,
> And gladly Nature's love partake
> Of thee, sweet Daisy!"

It is often said that as this is a practical age, with industrialism developing everywhere, therefore poetry must die away. Nothing could be farther from the truth. It is true that industrialism is developing at great pace; this, in fact, is the glory of our time, for civilization has entered on a new epoch. Men's minds are concerned with things that never concerned them before; yet, the resources of the old earth have merely been touched here and there, and the wealth of mankind will increase. But all this does not mean that sentiment is to be crushed or that the horizon of imagination is to be contracted, but rather the reverse. The flights of science and of truth are, after all, greater than the flights of fancy. If sentiment is necessarily eliminated from business transactions, it is all the more important that it be added to the recreation and the leisure. The

great constructive agencies of the time are essentially poetic; and the world never needed poetry so much as now. This thought is forcibly expressed in Charles Eliot Norton's advice, that has now been so effectively used by the press: "Whatever your occupation may be, and however crowded your hours with affairs, do not fail to secure at least a few minutes every day for refreshment of your inner life with a bit of poetry."

But this poetry of nature must be of the new kind. Perhaps the day of the formal "sustained" poem has passed,—with its ambitious disquisitions, long periods, heavy rhetoric, labored metaphors. It is a question, also, whether even the sonnet, although highly artistic, is free and plastic enough to express the nature-feeling of our time; for this feeling seems to be more and more impatient of historical limits and forms. The new

nature poetry must be crystal clear, for we have no time for riddles, even though they are set in metre and rhyme. It must be definite, and it must apply. The best nature poetry will be hopeful, joyous, and modern. At least some of it must deal with objects, phenomena, and emotions that are common to common men: then it will become a part of men's lives, not merely an accomplishment to be used with proper manners and on occasion. Perhaps this more vital song will relieve poetry writing of much that is too theoretical and fine-spun; and I hope that it may also divert the current from the weak and petty lovelorn type of verse-making which exploits personal love affairs that ought to be too private and sacred for publication and which in the end contributes nothing to the poetry of emotion.

This poetry, whether its flight is small

or great, must be born of experience, and must be intrinsic; it must be the expression of a full heart, not the sentiment of a looker-on. It must not be assumed or forced. No man whose heart is not full of the beauty and meaning of a leaf should write even a distich on the leaf. So, too, the nature poem of wide reach must be the poem of the man who is free. Such poetry must spring from the open air; perhaps it must be set to words there,—at least outside the city. The city will have its great poems, but they will rise out of the city as Venus rose out of the sea. It seems to me that we have really very little genuine nature poetry. Our poets, in spirit or in fact, now write largely from the city and the study outward, and their work is bookish. The product is the cultured poetry of the library and the study, and is under the influence of the schools. It continues

to be burdened with outworn and useless metaphor, and it follows traditional forms of verse and line, as if verse and line were more than essence. Walt Whitman —poet of the commonplace—has most completely freed himself from the bondage of literary form; and he is only an earnest of what shall come. It is doubtful whether the great nature poet will be taught in the formal curricula of the schools. His spirit and his method will be as unconfined as the inaccessible mountains, the great plains or the open sea. His poetry must be much more than pleasing and local: it must be rugged and continental.

It must be true that the appreciation of poetry is increasing; and poetry is prophecy. If it is not increasing, then our education is worse than most of us think; but if appreciation of poetry is increasing, then we are acquiring a

stronger hold on aspirations that are simple and elemental and universal. I am constantly surprised at the poems that busy and practical men know; and also at the poetry that many busy men can write. There is reason to believe that there were never so many poets in the world as now. Poetry-making is not an occupation, but the incidental spark that strikes off from useful labor; it is the result of full and serious lives. The roll of machinery is rhythm and rhyme; the blowing of the wind is music.

It has been my good fortune to have had many years' experience in the teaching of farm boys. They are interesting boys, —strong, virile, courageous. They have not been stuffed and pampered, and have not had too much schooling. They have had the tremendous advantage of having been let alone, and of having developed naturally. They hold their

youth; their minds are capable of receiving new impressions with faith and enthusiasm. It is my habit to call these agricultural students together twice each month, and, amongst other exercises, to read them poetry. Usually at first they are surprised; they had not thought of it before; or they thought poetry is for girls: but they come again. They may hide it, but these farm boys are as full of sentiment as an egg of meat. There was one fellow who had to support himself and help members of his family. He was a good student, but the lines of his life had been hard. Whenever he called at my office it was to ask advice about money affairs or to tell me of difficulties that he feared he could not overcome. Apparently there was no sentiment in his life, and no room for it. One evening I read to the students Matthew Arnold's "Buried Life." The next day, Jenkins

came to my office, entered hesitatingly as if requesting something that he might not have, and asked whether I would loan him the poem till he could learn it, for he could not afford to buy.

I believe, then, in the power of poetry, —in its power to put a man at work with a song on his lips, and to set the mind toward nature and naturalness. I like the definite poem of a tree, or a stone, or a dog, or a garden, if only it tells the truth and stops when the truth is told. The old-time short nature poem was wont only to point a moral,—usually dubious and far-fetched and factitious—having little vitality of its own. It really was not a nature poem, for the real nature poem is its own moral. The poems and stories of the Old Testament are always interesting to my students because they have something to say, they are direct, not surfeited with adjectives

or burdened with rhetoric, and they are moral because they tell the truth and do not preach. We need to treasure the nature poem because it contains the elements of youth. So weary-old have we grown that we seem to be afraid to express our real selves; when now and then some person expresses himself in high places unconventionally and with native feeling, we hail him as a "strong man." It is only when we are with ourselves under the free open heaven that we seem to be able to feel things keenly and newly and freshly. When in the open I am hopeful and resilient; when in my study I am conventional and dull. I wrote this lecture in my study.

We need now and then to take ourselves away from men and the crowd and conventionalities, and go into the silence, for the silence is the greatest of teachers. Walt Whitman expresses this well:

"When I heard the learn'd astronomer,
When the proofs, the figures, were
ranged in columns before me,
When I was shown the charts and
diagrams, to add, divide, and measure them,
When I sitting heard the astronomer where
he lectured with much applause in the lecture-room,
How soon unaccountable I became tired and sick,
Till rising and gliding out I wander'd
off by myself,
In the mystical and moist night-air, and
from time to time,
Look'd up in perfect silence at the stars."

THE WAYS OF APPROACH TO NATURE

It will be gleaned from what has been said that we are to consider literature, including poetry, to be one of the means of the enjoyment of nature. It is fundamentally important, however, that we regard literature only as a means: it is not nature. Literature has its own place and value; beyond all this, is our point of view toward the natural world in which we live. One can never be fully

appreciative of this natural world unless he has technical knowledge of some special part of it. One assuredly cannot be zoölogist, geologist, botanist, and meteorologist; but if he has intimate personal knowledge of one limited part, he has the key to the whole. As the real love of nature rests on knowledge, the person must have pursued some branch of natural history for a time with serious purpose,—the purpose to discover and to know the subject-matter for himself. This gives him point of view; tells him what to look for; enables him to look beneath the surface; trains his judgment as to causes and effects; guides him in distinguishing the essential; saves him from humiliating error.

But before one takes up any serious bit of study for himself, he must have the desire to take it up. In every person there is a latent desire to know some-

thing of the enclosing world. This desire is usually ironed out in the intellectual laundering processes. It is important that some one lead on this desire before it is overwhelmed by a multitude of less relevant affairs. In some persons this native desire is so strong that nothing extinguishes it: these persons become professional investigators and widen the boundaries of knowledge. Most of us, however, must give our main thought to other matters, and let the outlook to nature be chiefly a well-guided affection. Having this reasonable affection, the proper literature deepens it and adds a charm of its own.

The best possible introduction to nature is that afforded by a sympathetic person who knows some aspect of nature well. You imbibe your friend's enthusiasm at the same time that you learn birds, or plants, or fishes, or the sculp-

turing of the fields. I say enthusiasm, for this is quite as important as knowledge,—perhaps it is more important than knowledge. But by enthusiasm I mean never mere exclamatory demonstration, but that quiet and persistent zeal that follows a subject to the end for the love of it, even though it take a month. This person need not be a professed "scientist," unless he is also a good teacher and knows what is most important in the subject and most relevant to you. The earlier the child has such a guide—if arrived at the age of reason—the more vital and lasting the effect: even one or two excursions afield may change the point of view and open the way for new experiences, although neither the guide nor the child may be aware of it at the time. The ideal guide was "Gramp," as James Buckham knew him ("Country Life in America"):

"What a man to fish and camp,
What a hand to hunt and tramp
Up and down the woods, was Gramp!

"How he led me, high and low,
Plunging through the brush and snow!
Boy-like, how I loved to go!

"Oh, the sweet days that we spent
In the forest's pure content!
Oh, the long, still miles we went!

"Keen-eyed Gramp! How well he knew
Where the biggest berries grew,
Where the witch-like woodcock flew!

"Learned was he in all the lore
Of the wood-wise men of yore—
Subtle knowledge, taught no more.

"Ah, a happy boy was I,
Loving God's free woods and sky,
With dear Gramp to teach me why!"

That which is first worth knowing is that which is nearest at hand. The nearest at hand, in the natural environment, is the weather. Every day of our lives, on land or sea, whether we will or no, the air and

the clouds and the sky surround us. So variable is this environment, from morning till evening and from evening till morning and from season to season, that we are always conscious of it. It is to the changes in this environment that we apply the folk-word "weather,"—weather, that is akin to wind. No man is efficient who is at cross-purposes with the main currents of his life; no man is content and happy who is out of sympathy with the environment in which he is born to live: so the habit of grumbling at the weather is the most senseless and futile of all expenditures of human effort. Day by day we complain and fret at the weather, and when we are done with it we have—the weather. There is no other effort at which human beings are so persistent, and none at which they are so universally unsuccessful. The same amount of energy put into productive wholesome

work would have set civilization far in advance of its present state. "What cannot be cured must be endured;" but there is really nothing in the weather to cure. It is not a human institution, and therefore it cannot be "bad." I have seen bad men, have read bad books, have made bad lectures, have lived two years about Boston,—I have never seen bad weather!

"Bad weather" is mainly the fear of spoiling our clothes. Fancy clothing is one of the greatest obstacles to a knowledge of nature: in this regard, the farm boy has an immense advantage. It is a misfortune not to have gone barefoot in one's youth. A man cannot be a naturalist in patent-leather shoes. The perfecting of the manufacture of elaborate and fragile fabrics correlates well with our growing habit of living indoors. Our clothing is made chiefly for fair weather;

when it becomes worn we use it for stormy weather, although it may be in no respect stormy weather clothing. If our clothes are not made for the weather, then we have failed to adapt ourselves to our environment, and we are in worse state than the beasts of the field. Much of our clothing serves neither art nor utility. Nothing can be more prohibitive of an interest in nature than a millinery "hat," even though it be distinguished for its floriculture, landscape gardening, and natural history.

The discomforts of the weather are largely the result of unsuitable garments. I am always interested, when abroad with persons, in noting the various mental attitudes toward wind; and it is apparent that most of the displeasure from the wind arises from fear of disarranging the coiffure or from the difficulty of controling a garment. Let us sing the wind!

The wind, the wind,
The moaning wind!
In monotone
Alone, alone
It weeps and groans
It croons and moans,
And the chilly moon
Rides aloft at noon
In the moaning, moaning wind.

The wind, the wind,
The thieving wind!
It whisks and starts
It scuds and darts
It flings the sheaves
It shakes the leaves,
And the apples lie
Where the weeds are high
In the thieving, thieving wind.

The wind, the wind,
The summer wind!
In idle ease
Thro' weeds and trees
It wafts and woos
It soothes and sues,
And I fall asleep
Where the grass is deep
In the summer, summer wind.

The wind, the wind,
The winter wind!
It sweeps and soars
It howls and roars
It drives the snow
It piles the floe,
And the drifting sky
Runs sterile and dry
In the winter, winter wind.

Our estimate of weather is perhaps the best criterion of our outlook on nature and the world. The first fault that I would correct in mankind is the habit of grumbling at the weather. We should put the child right toward the world in which he is to live. What would you think of the mariner who goes to sea only in fair weather? What have not the weather and the climate done for the steadiness and virility of the people of New England? And is this influence working as strongly to-day as in the times when we had learned less how to escape the weather? We must believe in all

physical comfort,—it contributes to the amount of work that we can accomplish; but we have forgotten that it is possible to bear an open storm with equanimity and comfort. The person who has never been caught in rain and enjoyed it has missed a privilege and a blessing. I never want to live in one of those featureless climates that cannot get up spunk enough to raise a storm. Give us the rain and the hail and the snow, the mist, the crashing thunder, and the cold biting wind! Let us be men enough to face it, and poets enough to enjoy it. In "bad" weather is the time to go abroad in field and wood. You are fellow then with bird and stream and tree; and you are escaped from the crowd that is forever crying and clanging at your heels.

Weather is the universal environing condition: it is but a step from this en-

vironment to the special objects therein. The customary objects are the ones that should first receive attention. Do not wander in remote places or in foreign lands merely to find nature: she is at your door. Touch the things near at hand: you will then understand the things far away. The first consideration of special study should be the inhabitants of your yard and garden: they are yours; or if they are not yours, you are not living a right life. Do you wish to study botany? There are weeds in your door-yard or trees on your lawn. You say that they are not interesting: that is because you do not know them. Every plant is as interesting as every other plant; if not, the fault is not with the plant. We have made the mistake all along of studying only special cases. We seem to have made up our minds that certain features are interesting and that all other features

are not. It is no mere accident that many persons like plants and animals but dislike botany and zoölogy. It is more important to study plants than special subjects as exemplified in plants. Why does the weed grow just there? Answer that, and you have put yourself in pertinent relation with the world out-of-doors.

Of course he who is to lead an effective and reposeful life must be in sympathy also with artificial environments, as factories and streets; but it is not my special purpose to teach of these. The natural environment is the more important, because it is the condition of our existence. The other environments are incidental, human, capable of great improvement; yet we are brought into sympathetic touch with them if we have had the training of a wholesome outlook to nature. I like Timrod's sonnet to the factory smoke:

"I scarcely grieve, O Nature! at the lot
That pent my life within a city's bounds,
And shut me from thy sweetest sights and sounds.
Perhaps I had not learned, if some lone cot
Had nursed a dreamy childhood, what the mart
Taught me amid its turmoil; so my youth
Had missed full many a stern but wholesome truth.

Here, too, O Nature! in this haunt of Art,
Thy power is on me, and I own thy thrall.
There is no unimpressive spot on earth!
The beauty of the stars is over all,
And Day and Darkness visit every hearth.
Clouds do not scorn us: yonder factory's smoke
Looked like a golden mist when morning broke."

I would preach the surface of the earth, because we walk on it. When a youth, I was told that it was impossible for me to study geology to any purpose, because there were no outcroppings of rocks in my region. So I grew up in ignorance of the fact that every little part of the earth's surface has a history, that there are reasons for sandbanks and for bogs as well as for stratified rocks. This is

but another illustration of the old book-slavery, whereby we are confined to certain formal problems, whether or not these problems have any relation to our conditions.

The landscape is composed chiefly of three elements,—the surface of the earth, the sky, the vegetation. I well remember what a great surprise it was to learn that the sculpturing of the fields can be understood, and that the reasons for every bank and knoll and mud-hole can be worked out. There was a field back of the barn that contained hundreds of narrow knolls, averaging three to four feet high. At one side of every knoll was a narrow deep pocket that until midsummer was filled with water. The field was so rough that it could not be plowed, and so it was continuously used as a pasture. It was an Elysian field for a boy. Every pool was a world of life, with strange creatures

and mysterious depths, and every knoll was a point of vantage. Near one edge of the field ran a rivulet, and beyond the rivulet were great woods. What was beyond the woods, I could only surmise. I recall how year by year I wondered at this field, until it became a sort of perpetual and unexplainable mystery, and somehow it came to be woven as a natural part of the fabric of my life. To this day I try once each year to visit this dear old field, even though it is long since leveled. All the sweep of my childhood comes back to me unbidden. The field is still a pasture, but generations of cows have passed on since then. Yet, as much as this field meant to me, I do not remember to have had any distinct feeling that there was any cause for the pools and knolls. My father cut the field from the forest, yet I do not remember that I ever asked him why this field was so; and I never heard

any person express any curiosity about it. We all seemed to have accepted it, just as we accept the air. As I think of it now, this field must have been the path of a tornado that turned over the trees; and long before the settlers came, the prostrate trunks had decayed and a second forest had grown. Would that I could have known that simple explanation! One sentence would have given me the clew. How the mystery of the ancient tornado and the rise of another forest would have conjured a new world of marvel and discovery!

When I had written this sketch of my pasture field, I called in a little school girl and read it to her. I wanted to hear her estimate of it,—for children are the best critics and also honest ones.

"That's a nice story," she said; "but I don't want to study such things in school."

"And why not?" I asked.

"Because they are hard and dry," she said.

Poor child! She was thinking of her books!

I would preach the sky. When in the open country we are impressed most with the sense of room and with the sky. City persons have no sky, but only fragments of a leaky roof; for the city is one structure and needs only a roof to make it a single building. They have no free horizon line, no including circle laid on the earth, no welkin. There are no clouds,—only an indefined something that portends rain or hides the sun. One must have free vision if he is to know the sky. He must see the clouds sweep across the firmament, changing and dissolving as they go. He must look deep into the zenith, beyond the

highest cirrus. We have almost lost the habit of looking up:

"Look unto the heavens, and see;
And behold the skies, which are higher than thou."

Or, if we note the sky, it is chiefly a mid-day or sunset recognition. Our literature is rich in sunsets, but poorer in sunrises. Civilization has led us away from the morning, and at the same time it has led us away from youthfulness. We have telescoped the day far into the night, and morning is becoming obsolete. We are owls. I know that this cannot be helped; but it can be mentioned. I have asked person after person whether he ever saw the sun rise. The large number have said no; and most of those who had seen the sun rise had seen it against their will and remembered it with a sense of weariness. Here, again, our farm boy has the advantage: he leads something like a

natural life. I doubt whether a man can be a poet if he has not known the sunrise.

The sky is the one part of the environment that is beyond our reach. We cannot change it; we cannot spoil it; we cannot paint signs on it. The sky is forever new and young; the seasons come out of it; the winds blow out of it; the weather is born from it:

"Hast thou entered the treasuries of the snow,
Or hast thou seen the treasuries of the hail?"

I preach the mountains, and everything that is taller than a man. Yet it is to be feared that many persons see too many mountains and too many great landscapes, and that the "seeing" of nature becomes a business as redundant and wearisome as other affairs. One who lives on the mountains does not know how high they are. Let us have one inspiration that lifts us clear of ourselves:

this is better than to see so many mountains that we remember only their names. The best objects that you can see are those in your own realm; but your own realm becomes larger and means more for the sight of something beyond.

It is worth while to cherish the few objects and phenomena that have impressed us greatly, and it is well to recount them often, until they become part of our being. One such phenomenon is idealized in my own memory. It was the sight of sunrise on Mt. Shasta, seen from the southeastern side from a point that was wholly untouched by travelers. From this point only the main dome of the mountain is seen. I had left the Southern Pacific train at Upton's and had ridden on a flat-car over a lumber railroad some eighteen miles to the southeast. From this destination, I drove far into the great forest, over volcano dust

that floated through the woods like smoke as it was stirred up by our horses and wagon-wheels. I was a guest for the night in one of those luxurious lodges which true nature-lovers, wishing wholly to escape the affairs of cities, build in remote and inaccessible places. The lodge stood on a low promontory, around three sides of which a deep swift mountain stream ran in wild tumult. Giant shafts of trees, such shafts as one sees only in the stupendous forests of the far West, shot straight into the sky from the very cornices of the house. It is always a marvel to the easterner how shafts of such extraordinary height could have been nourished by the very thin and narrow crowns that they bear. One always wonders, also, at the great distance the sap-water must carry its freight of mineral from root to leaf and its heavier freight from leaf to root.

We were up before the dawn. We made a pot of coffee, and the horses were ready,—fine mounts, accustomed to woods trails and hard slopes. It was hardly light enough to enable us to pick our way. We were as two pigmies, so titanic was the forest. The trails led us up and up, under pitchy boughs becoming fragrant, over needle-strewn floors still heavy with darkness, disclosing glimpses now and then of gray light showing eastward between the boles. Suddenly the forest stopped, and we found ourselves on the crest of a great ridge: and sheer before us stood the great cone of Shasta, cold and gray and silent, floating on a sea of darkness from which even the highest tree crowns did not emerge. Scarcely had we spoken in the course of our ascent, and now words would be sacrilege. Almost automatically we dismounted, letting the reins fall over the horses' necks,

and removed our hats. The horses stood, and dropped their heads. Uncovered, we sat ourselves on the dry leaves and waited. It was the morning of creation. Out of the pure stuff of nebulæ the cone had just been shaped and flung adrift until a world should be created on which it might rest. The gray light grew into white. Wrinkles and features grew into the mountain. Gradually a ruddy light appeared in the east. Then a flash of red shot out of the horizon, struck on a point of the summit, and caught from crag to crag and snow to snow until the great mass was streaked and splashed with fire. Slowly the darkness settled away from its base; a tree emerged; a bird chirped; and the morning was born!

Now a great nether world began to rise up out of Chaos. Far hills rose first through rolling billows of mist. Then came wide forests of conifer. As the pano-

rama rose, the mountain changed from red to gold. The stars had faded out and left the great mass to itself on the bosom of the rising world,—the mountain fully created now and established. Spriggy bushes and little leaves—little green-brown leaves and tender tufts of herbs—trembled out of the woods. The illimitable circle of the world stretched away and away, its edges still hung in the stuff from which it had just been fashioned. Then the forest awoke with calls of birds and the penetrating light, and the creation was complete!

I have now reviewed some of the characteristics of the sympathetic attitude toward nature, and have tried to show how this outlook means greater efficiency, hopefulness and repose. In the subsequent lectures I shall enlarge on its bearings on certain practical and very

essential affairs. I have no mind to be iconoclast, to try to tear down what has been built, or to advise any man to change his occupation or profession. That would be impossible to accomplish, even were it desirable to advise. But even in the midst of all our eagerness and involvedness, it is still possible to open the mind toward nature, and it will sweeten and strengthen our lives. Nature is our environment, and we can not escape it if we would. The problem of our life is not yonder: it is here. The seeking of truth in fresh fields and for the love of it, is akin to the enthusiasm of youth.

II

Country and City

A RECENT press despatch, reporting a club dinner, asserts that the great universities of the future are to be in the great cities. There are no limitations, except physical ones, to the growth of metropolitan cities; in these cities the "universities will develop along special lines because of their special environment, and their development will be the best;" and "the scholar filled with the impulse of service is going to seek his home in the dark gray city, and seek to make it less dark and less gray." If a country university "wishes to study the fine arts she has to divert funds to buy the objects of study," but the metropolitan university can turn to the galleries of the city.

In his address on "A Generation of Cornell," President Schurman used the following words: "Not the noise and glare and rush of inane city streets, but the majestic calm and beauty of the face of nature is the proper place for the spiritual nurture of young men and maidens during the few short years devoted to the higher education. And fortunately there is no branch of learning or science, no sort of liberal culture, no species of professional training which cannot be more advantageously pursued in the country than in the city. It is not surprising, therefore, that Mr. Rashdall closed his great work on the History of Universities with the doubt 'whether the highest university ideal can be realized with the fullest perfection even in a single modern city of the largest type.'"

Although these two strong utterances seem to be diametrically opposed, they

are not at all surprising. They are the expressions of men who see great opportunities for useful service. That they see these opportunities just where they serve is the very proof that they serve well. These antitheses are another illustration of the fact that the door of opportunity opens wherever men labor with ability and love, and that one's problems are just where he lives. Where the great universities of the future are to be is a matter of small consequence, if only they render great service to mankind,—for the universities are to reach out to all the affairs in which men engage, as well as to instruct those who come to their doors.

WILL THE CITY DICTATE OUR CIVILIZATION?

The question I propose now to discuss is whether civilization is to center only in the city. No one will dispute the great

future that lies before the city. The imagination cannot picture it, as cities grow into stupendous aggregations of souls, with labor divided and subdivided, and human capabilities multiplied perhaps a hundredfold. The science of city-building is in its merest infancy,—men yet scarcely know what the phrase means. The human race is yet young. Famine and disease and war have held it in check; but these monsters we shall overcome. Where the earth now supports one human being, we expect, before it die, that it will support hundreds. The cities will be the world's great nuclei, and, like all nuclei, they will be complex.

But cities cannot build cities. The country builds the cities. The cities only handle and transform what the country produces. There are three great sources of raw material,—the sea and the mines and the soil. Some day the mines will

fail; we shall transmute metals into metals and the dreams of the old alchemists will come true. The sea and the soil will remain while man lives on the earth. But men do not live on the sea: they only trade there. The men who supply the cities will live outside the cities, in the open country. The great metropolitan centers, even though they contain ten millions or fifty millions of people, probably cannot contain one-half the population of the earth. There will be cities of all lesser degrees, and villages, and quiet hamlets, and rural communities, and isolated farmers, and poets living far out in the center of the world. The men in the country are men, living their lives, with days full of work and of plans and of progress. They have problems, and these problems must be solved. These are problems of honest sustenance for themselves and those whom they love. The

parasitic occupations are in the city. If the universities are to help to solve the problems of the "dark gray city," they must also help to solve the problems of the free open country. The city is elaborate and artificial: the country is direct and natural. In the city, snow is a burden and a nuisance; in the country it is a benediction.

The country problem is the city man's problem. No man who is far-sighted can shut himself up to city or country alone, for what makes for the good of one makes also for the good of the other. The country problem is essentially an outlook to nature, and the farmer is a naturalist. In proportion as he is a good naturalist he is a good farmer. The farmer, woodsman, hunter, explorer knows more about the things in the out-of-doors than you can find in any book, and he knows them so well that he cannot tell them. It is only

those of us who acquire knowledge recently and freshly that hasten to publish it. The best naturalists do not write.

City and country are not antagonistic forces. The modern world is dominated by cities, and we forget that the country was always the country and will always be the country. And the central unit in the country is the farm. More men are engaged in farming than in any other single occupation, and I presume that it will long be so. The fixed capital engaged in agriculture at present is several times that engaged in manufacturing enterprises. The farmer has been counted out, or not counted at all, in much of the estimate of the world's progress. The educational and social forces touch him last or not at all, except as they demand his share for their support. I sometimes think that, as a race, our real outlook to nature is to rest largely

on the farming occupation, and therefore that we need to conserve this occupation in order to recruit and reinforce the native strength of our civilization as well as to provide a source of material supplies.

No doubt some of you are thinking of the enormous growth of cities and of the consequent lessening of the rural population, and draw the conclusion that we are to be a nation of cities, with agriculture playing a constantly less and less important part. It is true that relatively the country population is decreasing. The rural population is now approximately half of the total population. The farmers are about one-third of our people. I expect to see the percentage of rural population and of farmers fall still lower. What is to be the ultimate ratio of farmers to the total population in any self-sustaining geographical region it

is not now possible to determine. I have usually placed it at about one-fourth, or sometimes as low as one-fifth of the total; possibly it will fall still lower than this latter ratio. It must not be supposed, however, that a lessening ratio of population means a depreciating agriculture; in fact it may mean just the reverse,—that the persons remaining on the farm are increasing in efficiency. We are now an exporting nation, the exports of agricultural products greatly exceeding the imports; but Mississippi has 76 per cent of its population in the country and most of the southern and many of the western states are still overwhelmingly rural; hence there is still reason and opportunity for persons to remove from the farms to the city. I am glad that so many of the farm boys have gone to the cities, for the cities need them; yet we must not suppose that all of them are going to the city.

It has been argued that since agriculture is concerned in the production of food, it cannot be greatly extended, as increasing civilization does not cause men to eat more. This argument is made with great conviction by Josiah Strong in his stimulating book, "The Twentieth Century City." The author is making the argument that the problem of civilization is to be chiefly the problem of the city. "It will not be long before urban population will largely preponderate over rural in the United States, and in due time we shall become a nation of cities"; "The new civilization is certain to be urban; and the problem of the twentieth century will be the city." I quote further:

"Dr. Engel, formerly head of the Prussian Statistical Bureau, tells us that the percentage of the outlay for subsistence grows smaller as the income grows larger."

"This natural limit to the world's demand for food, though perfectly obvious when mentioned, necessitates conclusions which are by no means self-evident. It shows that all efforts to relieve the congestion of the city by removing the population to unoccupied lands, must needs be futile. If a hundred thousand families could be transferred from city slums to the country, and so trained as to become successful farmers, which is more than doubtful, it would not in the slightest degree mitigate poverty or relieve the pressure of population upon the city. These hundred thousand farmers could succeed only by getting the market; and as the world would eat no more simply to accommodate them, they could get the market only by driving a hundred thousand other farmers out of it; who, being forced off the farm, would with their families gravitate to the city."

"Another conclusion to which we are forced is that all attempts to retard the movement of population from country to city by raising the standard of agriculture will prove worse than futile. It is said that if agriculture were made profitable, as it might be by scientific methods, farmers would not wish to abandon it.

"Scientific farming succeeds, because a given amount of effort, when more intelligently directed, produces greater results. Inasmuch, then, as the amount of food which the world can consume is limited, the more intelligent or scientific the farming is, the smaller will be the number of farmers required to produce the needed supply, and the larger will be the number driven from country to city. It has already been observed that if scientific methods were universally adopted in the United States, doubtless

one-half of those now engaged in agriculture could produce the present crops, which would compel the other half to abandon the farm."

These arguments rest on the assumption that agriculture produces only or chiefly food; but probably more than half of the agricultural product of the United States is not food. It is cotton, flax, hemp, wool, hides, timber, tobacco, dyes, drugs, flowers, ornamental trees and plants, horses, pet and fancy stock, and a hundred other non-edible commodities. The total food products in the United States, according to the twelfth census, was $1,837,000,000. The cost of materials used in the three industries of textile, lumber, and leather manufactures alone was $1,851,000,000. If Dr. Engel propounds the doctrine that the outlay for subsistence diminishes as income increases, then I make the counter

proposition that the amenities, comforts, and luxuries increase in intimate ratio with the income; and the larger part of these categories come from the farms and the forests — and forests are farms that for the time being are unmanaged or mismanaged. Dr. Engel, in fact, allows this, for he is quoted as holding that "sundries become greater as income increases." Mention but four agricultural articles — wood, paper, leather, cloth — that enter into our items of building, furniture, and clothing, and you see at once what civilization owes to the farm beyond what it eats. President Roosevelt has recently said with great force that the demand for wood is increased even with all the increase in fire-proof construction of buildings, because the amount of building is increased. Forestry is an agricultural occupation, and so regarded by the President and the

government, for the forest is a crop from the land.

Mr. Strong argues that the sending of city people to the farms will not relieve the tension in the city, and I am inclined to think that he is correct. It is not, however, because these persons would produce an over-supply of food, but because they would probably make poor farmers. They might raise flowers. There is no more significant development than the growth of floriculture. The value of flowers and plants as reported in the twelfth census was nearly nineteen millions of dollars; and every one is aware that this industry is yet only in its beginnings. The rise of civilization can be measured by the rapidity with which the luxuries become the necessities. Fifty years ago flowers meant nothing to the general development of our civilization; to-day they have become one of its neces-

sary amenities. The best civilization cannot live without flowers any more than it can live without pictures.

Perhaps some of you are dreaming of the days of chemical synthesis, when the laboratory shall make the foodstuffs and the day of the farm will be done. That day, however, will never come. The chemist may synthesize starch, but he will never make a potato. He will never make a leaf of lettuce, or a hen's egg, or an apple with its clean and fragrant juices, or food for a cow, or a fiber of cotton, or a flower that has breath from the wind and color from the sky. He will never make a seed that will know whether to grow into a turnip or a cauliflower or a cabbage. He may make food that will sustain life, but we shall never be content merely to feed, and, above all, to feed on tablets,—for it is to be hoped that the day of pills and

capsules is behind us, not ahead of us. And even if he makes the food, the city can not supply him with the raw materials wherewith to make it. The city is dependent. Cut off the traffic in milk and water and other supplies from the country for twenty-four hours, and Boston will be in distress. Your shops and theaters will close; your trolley-cars will stop; your children will cry in distress. Annihilate the cities and the country still exists; and I should not much marvel if it would be a month before some of the countrymen would hear of the phenomenon.

THE COUNTRY IS MAKING PROGRESS

The country is now beginning to make very remarkable progress. This progress is not expressed so much in so-called "improvements" as it is in the city, but it is none the less permanent and real.

The city is an advertising organism; but there are no signs in the country, unless placed there for city concerns. The rural progress consists in a really marvelous development of machinery; a still more marvelous extension of fundamental knowledge of the principles and practices of good farming; in the rise of social and economic organization; in the spread of sources and means of intelligence. Much of this great change has developed in the West or has been chiefly stimulated by the West. Persons cut loose from hide-bound traditions when they left the old homes and roamed over the vast areas of the West. There was bigness in the stretch of the plain, newness in the forest and prairie, generousness in the soil. If the soil of Iowa were underlaid with gold, it would be worth less to Iowa than it is with its present stores of plant-food,—for plant-food

develops permanent human institutions. Vast areas of virgin land and small amount of labor called for new and large methods. The lands soon paid for themselves, and surplus accumulated. This surplus has been turned into the home and the school. In most of the small towns of the prosperous parts of the West, the school building is the most imposing structure in the place. Freer ideas of farming developed, and larger ideas of the individual farmer and the home life. These ideals are now reacting on the East. The East will arouse. It is arousing; and with the best of its traditions still preserved, it will again develop a race of mighty farmers. The so-called abandonment of farms of New England is to be the salvation of its agriculture, for it means the abandonment of old ideas.

I stand, then, for the open country, for

its affairs, for the trees that grow there, for the heaven above, for its men, for its women, for its institutions. In the stress and racket of your cities, you forget the quiet patient lives away yonder on the hills and in the valleys, and still beyond on the plains. But they are more numerous than all the families of all your great cities. They are my people; with them I was born; their problems are my problems; for them I mean to labor as long as I have strength and life.

Not nearly all of mankind will go to the cities, and not all of the civilization and the progress of the race will be represented by the city. Not all the best character-building is to be in the city or even in the suburbs of the city. It is the city that breeds or attracts most of the crime. The country has its own life; it will have a better and more hopeful life, sweet and sane and moderate and warm-

hearted. There are "homes" maintained for sailors and soldiers and actors, and others. Where is the "home" designed for farmers? Each farmer builds his own: it is the first thing he does. The farmer does not think of renting a house to live in, unless he is a mere tenant. Let Congress or any legislature propose to establish a "home" for farmers, and it insults every farmer in the land. The farm idea is the home idea. The farmer is practically the only person who makes his home, lives in it, and passes it down to his children. Homes go with land, not with franchises. The farmer holds his ground, sometimes even too tenaciously. The struggle may be hard and the odds against him, but day in and day out, year in and year out, sun and rain, he stands by the plow and works out his own salvation. I hope that new schools and better social forces will touch him

into quickened life; but I hope also that he will always be conservative, for an enlightened conservatism is the safeguard of civilization.

Moreover, the countryman will not always go to the city to be taught. It is only recently that he has gone to the city. Once the country school and the country church were as good as any. Cities have grown, and the country has stood still. It is now time for the tide to turn. We shall consolidate and centralize our schools and have as good schools in the country as in the city. Perhaps they will be better by being simpler. I look for the time when city children will be sent to the country to school. The farm boy and the farm girl are not going to the city to college unless they expect to leave the farm; they may not go there even then. The city is not their realm; and men are to be taught in their own realms.

The press extract that I quoted at the opening of this lecture pleads for the city university because it can serve the city. There could be no nobler purpose. In serving the city, it will also serve the country and mankind. May I not plead for the country university because it may serve the country as well as the city? And the country university, if it thrive, is necessarily cosmopolitan, for it has no local constituency. The extract also pleads the value of collections and galleries. But "collections" are only incidents in any educational scheme. We have made the mistake of considering them of first importance. We are in the era of making great libraries: perhaps the time will come when we shall think more of dispersing books than merely of collecting them. Perhaps it will be better to have one thousand books with one hundred families than ten thousand books

in one library. The library should be a home idea as well as a civic idea. The old idea of the natural history museum was for persons to "see." It was largely an exclamatory institution. It is now supplemented by specimens to work with; and specimens to work with are being related to the fields where their places are. Dead things alone are for dead teachers. The museum and collection idea is necessary, but it is still largely an exhibition idea. I brought a live bittern to my house; the children left their books to watch it. The bittern died and I had it stuffed and put it on the mantle; the children left the bittern for the books. I gave the bittern to the museum; it was not good enough for children.

Is it not strange that all our art galleries are indoors? We get up at ten o'clock in the morning and call a carriage

to drive us to the gallery to see a picture of a sunrise! We must see a picture of a tree before we are aware that a tree is worth making a picture of. The world out-of-doors is the real gallery; all our best galleries and best buildings are but imitations and interpretations.

Collections and galleries by means of which to teach men? They are trivial compared with what I can show you in yonder fields. Collections instruct those who would be instructed; we need many more of them; but my fields have intrinsic uplift and inspiration. The city cannot have real fields, and real forests and real animals and real live stock and real landscape. Some day we shall construct great pictures out-of-doors. We shall assemble the houses, control the architecture, arrange the trees and the forests, direct the roads and fences, display the slopes of the hills, lay out

the farms, remove every feature that offends a sensitive eye; and persons will leave the galleries, with their limitations and imitations, to go to the country to see some of the greatest works of art that man can make. These works will have sweep and breadth and distance. They will comprise whole countrysides. Every rain and wind and snow will heighten their efficiency and their meaning. Many of the works that we are so fond of indoors will appear trivial. Art societies will be formed whose attention will be given chiefly to art out-of-doors,—to art that is always new and real and large and inspiring. A new art profession is just now rising, having for its sphere the real field under the open sky. As yet it has no name. Once it was called landscape gardening, when its efforts were confined to the constricted areas of gardens and parks. Now it is called landscape archi-

tecture, as in its present stage it has much to do with buildings and engineering problems. Soon it will rise beyond all these arbitrary bounds and take the face of the earth for its own. The regulation of the scenery of mountains is not too large for its grasp. It will be one of the great art efforts of the future.

We shall have more colleges and universities rather than fewer; these institutions will serve mankind; they will be where the problems of mankind are; some will be in metropolitan cities and some in cities of lesser estate; a university will not necessarily be useful in proportion as it is bulky; methods and ideas associated with universities will probably crystallize around new foci, and what is now considered to be central may some day be considered as peripheral. Very likely we shall see again the rise of the individual, unattached, and isolated

teacher, who shall cut himself free from all cults and systems and take his followers directly out to nature.

But my purpose in this address, as I have said, is not to discuss universities, but to call your attention to the fact that the country still exists, that its affairs and institutions are making progress, and that it is to play an increasing rather than a lessening part in our common welfare. Country and city, city and country, coöperating, interacting, conserving, concerting,—together they are to build our civilization. It is probable that most of the leadership will lie with the cities, and that the regulating and conserving elements will be largely in the country.

COUNTRYMAN AND CITY MAN

I am speaking to city people. This leads me to say that there are two kinds of country and of country life,—the

country of the city man and the country of the countryman. These categories are wholly unlike, for the country is seen from opposite points of view, and with different preconceived ideas. The city man is a city man and looks outward to the country: it is his respite and release. The countryman is part of the country: it is his realm and his support. The city man thinks chiefly of agreeable features of the country; he is interested in its beauty and novelty and in its contrasts with the city. The countryman does not think of the features, for all features are his; he escapes neither weather nor season, since he belongs to the country as much as the trees and fields belong to it. The attitude of the city man is, "Come, let us go into the fields." The attitude of the countryman is, "These are the fields; here am I." Keats well expresses many city men's attitude:

"To one who has been long in city pent,
'Tis very sweet to look into the fair
And open face of heaven,—to breathe a prayer
Full in the smile of the blue firmament.
Who is more happy, when, with heart's content,
Fatigued he sinks into some pleasant lair
Of wavy grass, and reads a debonair
And gentle tale of love and languishment?"

The farmer's attitude may be expressed somewhat as follows:

I hoe and I plow,
I plow and I hoe,
And the wind drives over the main.

I mow and I plant,
I plant and I mow,
While the sun burns hot on the plain.

I sow and I reap,
I reap and I sow,
And I gather the wind with the grain.

I go and I come,
I come and I go,
In the calm and the storm and the rain.

Our point of view is determined chiefly by the means that brings us support: the

city man, even though he lives in the country and loves it, is supported by the city. He thinks as the city thinks. He often has a feeling of pity for the man who must live always in the country. The countryman has his own peculiar mental processes and points of view. The city is little to him except as it buys his products. His interest in the news columns of the newspaper is of a very different order from that of the city man. He is not a sportsman,—he seldom hunts for the "sport" of hunting. You know the genuine countryman when he comes to town; but he cares little what you think of him. He has a deep-seated dislike of the city. He considers that his is the original estate; and it is a significant fact that the dictionaries recognize the unit word "countryman" but no corresponding word "cityman."

As the city man's point of view of the

country is essentially a civic idea, it is clearly outside my province to discuss the larger relations of it. The city man's country life is of two kinds,—vacationing and summering in the country, and the making of homes in the suburbs. These interests are now well represented by magazines, but so far the original country life is represented by the agricultural class periodicals. It is not my purpose to discuss the vacationing and summering in the country, for that is largely of temporary and secondary importance. I am more interested in the permanent home-making force of country life. The home idea is clearly dying out in the cities. Homes seem to be incompatible with compact city life; consequence is that the serious-minded middle class is constantly working out and out toward the suburbs and the adjacent towns, in the effort to secure the greatest

possible proximity to nature consistent with business prudence. This transfer of domicile at once raises far-reaching questions. The political philosopher sees danger because this movement removes a large class of voters and is likely to leave the city, or the congested parts of it, in the hands of politicians. The social philosopher finds a new breed of citizen developing,—not country-bred nor city-bred, but suburban-bred, product of neither extreme. Will this citizen have the prejudices of either extreme? And will he be a more useful social factor because of his intermediate origin?

The country is certain to exercise a profound influence on the city. We now know that the city, with all its wealth of attractions and its suggestions of luxury, leaves some of the highest aspirations unsatisfied. The very intensity of the city demands the country as an antidote

and corrective. On the other hand, the city is to have a most marked influence on the country. The country needs the city. It does not need the city man so much to teach the countryman farming, as to touch and elevate the general currents of all country life. The city man goes to the country with new and large ideas, active touch with great affairs, keen business and executive ability, generosity, altruism, high culture. May we not hope that he will also always go with sympathy? All these traits will arouse the country from its tendency to complacency and narrowness. The blend should perhaps produce the real American. Certainly the city has a distinct duty to perform toward its contributory country, to help to build it up rather than to drain it,—a duty as clear-cut and imperative as any of its customary unselfish and high-minded efforts in aid of

the world's progress; and it is gratifying to know that even purely agricultural questions are now arousing unusual interest among city people, as one part of the great volume of human affairs. The problems of the open country constitute an important part of the problems of civilization.

THE GARDEN

It is my purpose, however, to speak of the personal and domestic influences of the country, rather than of public policies; and I am just now speaking of the suburban kind of country life. You go to the suburbs and the country in order that you may have more room, less racket, better health, more freedom, and closer relations with sun and wind and sky. But there should be more than a home in the country,—there should be country in the home. One room of the home should be an epitome of the coun-

try, as essential as dining-room or "den." By the way, the development of the "den" as a part of a modern house is most significant: it is a protest against the "spare-room" and all meaningless conventionality. But the room of which I am thinking is commonly known as a garden. I am not now thinking so much of the landscape part of the place, with its plan of lawn and trees and borders: this is a part of the general architecture of the establishment, a kind of foundation on which the builded building rests. The landscape garden will naturally comport with the style and "feeling" of the architecture of the place as a whole,—secluded if the house is secluded, bold, or homelike. Too often, I fear, the American yard is likely to resemble the literature of the period, in being striking, curious, or wonderful. Often it is of the look-at-me kind, made to be stared at.

"I have the most stunning effect of flowers on our street," a man boasted. I suggested that he could have stunned people more and at less cost by a liberal use of paint.

It is not the "front yard" or the "spare-room" that gives the real character to the home. You will see an English country home of very modest appearance; you may think it dull or uninteresting, yet somewhere behind the house or against the wall you are almost sure to find a garden, as secluded and as personal and individual as a library or a study. I wish that Americans would make gardens even if there were no hope that people would see them. The meaning of home has broadened and deepened very much within a lifetime. To the plainest home of the middle class there have been added a few good pieces of simple and useful furniture, a little col-

lection of books good at least to look at, simple music, pictures that have some meaning and are not mere wall decorations: may we not now add a garden? It does not matter how small or how large the garden is. If it is small, it will be condensed and perhaps we shall appreciate it the more.

I step from the house, and at once I am released. I am in a new realm. This realm has just been created, and created for me. I give myself over to the blue vault of the sky; or if it rain, to first-hand relationship with the elements,—for can I not touch the drops that fall from some mysterious height? I am conscious of a quick smell of the soil, something like the smell of the sea. I hear the call of a bird or a faint rush of wind, or catch a shadow that passes and is gone. There is a sudden sensation of green things tumbled over the ground. I feel that

they are living, growing, aspiring, sensitive. Then the details begin to grow up out of the area, every detail perfect in its way, every one individual, yet all harmonious. The late rain compacted the earth; but here are little grooves and cuts made by tiny rills that ran down the furrows and around the stems of the plants, coalescing and growing as they ran, digging gorges between mountainous clods, spreading into islanded lakelets, depositing deltas, and then plunging headlong toward some far-off sea,—a panorama that needs only to be magnified to make those systems of rivers and plains and mountains the names of which I dreaded so much in my old geography days. Soft green things push up out of the soil, growing by some sweet alchemy that I cannot understand but that I can feel. Green leaves expand to the sun; buds burst into flowers; flowers change

to fruits; the pods burst, and berries wither and fall; the seeds drop and are lost,—yet I know that nature the gardener will recover them in due season. Strange plants that I did not want are growing here and there, and now I find that they are as good as the rest, for they spring from the same earth yet are unlike all others, they struggle for place and light, and they too will have their day and will die away and in some mysterious process will come again. Insects crawl here and there, coming from strange crevices and all of them intent. Earthworms heave their burrows. All these, too, pass on and die and will come again. A bird darts in and captures a flying insect; a dog trots across the farther end of the plot; a cat is hidden under the vines by the wall. A toad dozes under a bench: he will come out to-night. It is all a drama, intense, com-

plex, ever moving, always dying, always re-born. I see a thousand actors moving in and out, always going, always coming. I am part of the drama; I break the earth; I destroy this plant and that, as if I were the arbiter of life and death. I sow the seed. I see the tender things come up and I feel as if I had created something new and fine, that had not been seen on the earth before; and I have a new joy as deep and as intangible as the joy of religion.

WHY DO THE BOYS LEAVE THE FARM?

Perhaps you would like to know what the country boy's outlook on life is. You are interested in him, for some day he may become a part of the city, adding one more unit to its complexity or its burden. Let us see how the world may appeal to him.

The one rural question that is most

asked and least answered is this, "Why do the farm boys go to the city?" Of course the one comprehensive answer is, "Because they think they can better themselves." This answer, however, does not consider ultimate causes. We might with profit reverse the question and ask, "Why should the boy remain on the farm?" The burden of proof would then be thrown on the farm; and I should like to hear the answers from the farmers if they were put on the stand and compelled to answer. Shall the boy be blamed if he thinks he sees a larger opportunity, and acts on the conviction? Shall the city be blamed if it presents these opportunities? The question, then, resolves itself into this: Is the farm lacking in natural opportunity? Or, is the boy mistaken?

Before considering these questions, we shall do well to disabuse ourselves of the

idea that this migration to the city is necessarily deplorable. It is part of the genius of a democratic country that the boy does not of necessity follow the occupation of his father. We want no Asiatic caste system. Furthermore, the country does not need proportionately so many men as it did fifty years ago, because machinery has taken the place of customary farm labor; and on the other hand, proportionately more men are needed in the city. In some of the eastern states the proportion of persons in the open country is undoubtedly too small; in other regions it is still too large,—in the South, for example, city-building is only begun. Fifty years ago it required four and one-half hours of labor to produce a bushel of corn; now it requires forty-one minutes. Then, it cost 35¾ cents to produce the bushel; now it costs 10½ cents. Fifty years ago

it required thirty-five and one-half hours to produce a ton of hay; now, it requires eleven hours and thirty-four minutes. Then it cost $3.06; now, $1.29. The saving in cost of labor each year in the United States, in the production of corn, wheat, oats, rye, barley, potatoes, hay, as compared with fifty years ago, is 681 millions of dollars.

We may now consider some of the influences — aside from a natural bent toward other occupations — that seem to me to be most powerful in turning boys from the farm. I speak as a teacher; and, as it is a common charge that the college educates away from the farm (this is not now true of the agricultural college), I shall give attention to those agencies that seem to have most to do with the college boy's attitude.

(1) There may be no business opening at home for the young man. The

father continues to run the farm. He may not give the boy "a chance"; and the boy has no capital with which to buy and stock a farm of his own. The father often does not wish to give the son even a "share" in the business,—too often he treats him on the plane of a "hired hand." The father may not withdraw from the active management of the business until compelled by age to do so; by this time the college boy, seeing many opportunities, has engaged himself in other business and he returns to the farm, if at all, only when he is ready to retire. When the father dies, the farm is for rent or for sale. The merchant's or manufacturer's son, on the other hand, expects to become part of his father's business. Of course, the farm must be made to be fairly profitable, if it is able to take the son into the business. This can be done; or if it cannot be done,

there is no reason why the son should return to it.

I am convinced that there is good opportunity for persons of means to aid young men by loaning money on land at a low rate of interest and on long time to those who desire to secure a start in farming. Such opportunities might keep many of our best young men in the country.

(2) Often the old farm is not worthy the educated young man. It had never occurred to father and mother, remaining at home with the daily round, that John would have a new outlook when he came home. He had been re-making, with a larger horizon, quickened ambition, higher ideals. The old place may not be of the kind to satisfy him; he has outgrown it. The buildings are shabby; the grounds are bare; the fences are down; the yards are foul with

weeds and litter; the cattle stand in mud; the land is hard run; the roads are poor; the inside of the house is austere and comfortless. If the young man has a somewhat free hand to correct and renovate, he may be content to remain and work out the problem; but often the parents resent innovations, and frequently the case is hopeless.

(3) The boy often lacks congenial associates. Perhaps he has attended the village school; or his imagination has been fired by reading. He longs for comrades with whom he can talk about the new things. The hired man does not satisfy his longings. Even father and mother may not be interested. He is drawn where the congenial spirits are. I sometimes think that the college will not have its normal influence on the farm until there are enough college men scattered on the farms and in the little towns to afford an

agreeable comradeship to the boy fresh from school.

(4) The farm may appear too small for his activities. He is ambitious, and he sees that achievement emanates largely from the city. As he grows older, the quieter life will make stronger appeal to him.

(5) There is less financial risk in some other business,—there he can work on salary, with some one else assuming executive responsibility.

(6) There may seem to be more ready money in other businesses. The rate of earning on the investment is large in any ordinarily successful farming business; but the investment is often very small, and the income is able to satisfy only a simple life that has many resources within itself. Even if the youth expects to make no more money elsewhere, he may be attracted by the prospect of spending

his money as he chooses, free from the paternalism of the farm.

(7) He may expect to find more diversion and entertainment in the city. He feels that entertainment does not belong to the country.

(8) The tendency of his teaching probably has not been such as to give him sympathy with the farm, or to develop any resourcefulness that he did not learn on the farm itself. There are three human agencies that teach the young: the parents, the preacher, the teacher.

The unconscious influence of the home has much to do with the current of one's subsequent life; and I am convinced that many boys and girls are turned from the farm because they hear the farming occupation undervalued at the family fireside. It is common to hear father or mother compare farming disadvantageously with other occupations. It is sin-

gular that other men usually put forward the advantages of their business,—they tell how much their business is worth. Farmers are prone to put forward the disadvantages,—they tell how little they have made. Sometimes only a few disparaging remarks profoundly influence the child. The farmer is now rapidly developing an effective pride of calling, however; he should also realize that he constitutes the most important nature-factor in our civilization: all this will modify the attitude of the farm boy.

The preacher is also an influential teacher. His position gives his advice and example unusual weight. Often he seems to have little admiration for labor, but only sympathy with the laborer. In the past, formal ethics and professional religion have been so prominent that he has been able to give but little attention to the physical and occupational side of

his parishioners' welfare; yet it is on this side that he is often most able to help and influence them. This is now all changing. I am constantly surprised to find how many country ministers are close students of farm problems and are thus able to be of great service in agricultural discussions; and this will surely have its effect on the boys and girls.

It is strange how completely the teacher and the school have been separated from the affairs with which the school children live. It is as if there had been a definite effort to disengage the child from its own life. One cannot be expected to acquire a great interest in a subject that is not worthy or capable of being taught; so that the schools have been leading away from the farm, like sign-boards pointing cityward. This subject is so vital to the outlook to nature that I must devote an entire lecture to it.

THE OUTLOOK FOR THE COUNTRY

Over against all these disadvantages may be set the advantages of farm life in the training of men, and these advantages will be apparent as soon as the eyes are open to see them and the mind trained to utilize them. What some of them are, I propose to discuss when I take up the question of schools. Greatest of all these training advantages is the farm boy's continuous hand-to-hand combat with real problems and real necessities. I am sorry for those persons who are unable to attack any question until they have consulted all authorities and looked up all references. I sometimes think that half the persons in the world do not know which end of a hoe handle, or other reality, to take hold of. The most hopeless persons often drift around to colleges and universities trying to find some way

to take hold of some problem. They have usually lived such lives of ease or irresponsibility or have been so little trained at home that they cannot bring themselves to grapple with something real and definite. Their ideas lack concreteness and clearness, because they have not put them to direct test. The college usually can do little for these persons until after they have taken hold of a job and have mastered it. They need hand work. Yesterday a student came to me for advice: his father is wealthy; the boy could do nothing with his hands; I could not put him in charge of any task requiring gumption and expect him to make anything out of it; he knew his books. I told him to quit college and go to work. If he made a success of the work, I should be glad to see him back. Of course he was a town boy. I never gave a farm boy such advice.

No person should be sent into life without the power to do something positive and useful. The best wealth is that which comes from earning. Some of the most helpless persons one meets are those who have money and the desire to accomplish something worth the while for humanity, and yet do not know how to proceed or what to do. They are not closely enough in touch with actual conditions to be able to expend themselves wisely. Their wealth is impotent, and they are likely to spend it on whimsies or fads or at least on irrelevant efforts; yet they may flatter themselves that they are rendering the world great service. It would be better if they would put their surplus in the hands of capable practical men to use for such service as should seem to these men to be wise.

While these and similar advantages of the farmer's life are real, they generally

do not appeal strongly to the farmer himself, and particularly not to the farm boy or girl. There must be more tangible attractions. In these lectures it is not my purpose to discuss the pecuniary possibilities of the modern farm nor to consider farming as an occupation: I am trying only to put before you some of the ways in which the farm and the country touch our outlook. Many agencies are now definitely aiding the farmer and helping to build up the open country, and these are beginning to hold the attention of the young men. All these agencies result in a wider intelligence on the part of the farming communities. The researches of the experiment stations and the teaching of the colleges are giving the countryman new facts and new points of view; and the general growth of knowledge is causing him to develop a higher self-respect and to demand more

consideration from those who shape governmental policies. All these many agencies are removing the objectionable features of farm life; when the patent objections are once removed, constructive progress will make greater headway.

The farmer is the ultra-individualistic element in our civilization. His isolation and his ownership of a property that is capable directly of supporting him, both tend to make him independent and also chary of coöperative effort. The farmers are the last persons to "combine." It has been difficult even to make any efficient association for purely social purposes: only the grange has been able to solve this problem, and even this powerful organization is as yet effective only in certain great geographical regions. City persons who desire to "reform" the country are very likely to forget all this and to begin with schemes of social or eco-

nomic organization. All schemes for the betterment of the country must begin with the individual farmer.

The country must be improved through an elevation of its ideals, and this can come about only by means of education. There is now a shifting of emphasis in agricultural teaching from the crop to the home. The burden of teaching has been chiefly to make the farm more productive. This is fundamental, and these efforts will not be remitted; but the farmer is a man and a citizen as well as a producer. He must be instructed in matters pertaining to good schools, good churches, good roads, good local government, good politics; and his intellectual and spiritual horizon must be broad enough to allow a sympathetic appreciation of the nature of which he is a part. Rural economics and rural sociology are subjects now

announced in college curricula. Even college people are asking what these subjects mean, thereby admitting that they have considered humane subjects to appertain to cities and other assembled interests. In the coming generation, the teacher in social and economic questions will exert a greater influence than the teacher of technical agriculture on the elevation of country life.

The farm home is the most direct and simple home; it is least disturbed by passing moods; it is nearest nature. It is important to the nation that it be preserved; but it is also important that it be improved. The first thing I would now do for the farm home is to put in sanitary water-works, for the care and comfort of the person. Nothing would so soon elevate the home ideals. Then I should try to reorganize the woman's work, as much as the man's work has

been reorganized in the barns and on the fields. Next I should like to revamp the lay-out of the home grounds, to make them convenient, neat, attractive, even artistic. Then I should want to consider the reading,—not too many newspapers, but books and bulletins and some magazines, the reading of which would increase knowledge and direct the development of good taste. Then I should improve the architecture. Buildings are silent teachers; every hour their impressions are repeated. I often wonder how it is possible for human beings to construct such homely dwelling-places. Consider the looks of the buildings that you see, one after another, along any street: birds and beasts do far better. The architects are partly to blame for lack of good taste and good sense in farm buildings, because they have concerned themselves so exclusively with

ambitious structures that common people do not think of common buildings as having any "architecture." Most persons do not know that good architecture is more a matter of proportions than of ornaments and accessories. For two years and more I have tried in vain to find architects to give advice on ordinary farm buildings. If I found any who would consider the question, they had in mind such buildings as only a city farmer could afford to build. I shall now go at it myself, for the need is so pressing that even poor advice is better than none. I shall begin with a chicken-coop or the like, and shall say that every building, even though it cost only five dollars, is either good architecture or bad architecture. Usually the most expensive dwellings are the most showy and formless. A century ago the farmhouses were mostly direct and tasteful in mass

effect. We yet admire these old well-proportioned buildings, notwithstanding all their imperfections of plan. Then came the great development of cities, and with it the rise of millinery architecture. The country copied; and we now see the effects,—narrow-chested gawky buildings standing high in the air as if land were worth so much a square foot, with jig-saw cornices, ten-pin gables and chicken-legged porches.

There is education in assembling with one's fellows. This is why city populations are so alert. Rural families are scattered. In some way, the deadening effect of too complete isolation must be overcome. It will not be overcome by farmers assembling in hamlets. The life of the ordinary hamlet is likely to be of a lower type than the life of separated farms. Many persons think that because European farmers live in hamlets, Ameri-

can farmers should live in them; but this is the reason why American farmers should not live in hamlets. The European rural hamlet is the historical result of social and economic conditions, and these conditions do not obtain in America. The American farmer will not become a peasant, because he has not come from a traditionally inferior social class. The absence of a dependent peasantry class makes for the development of a hardy practical intelligence, by throwing the farmer on his own resources. Moreover, the American farmer is a freeholder, a citizen with a vote, and has equal access with other men to schools and books and knowledge; it is altogether likely that he will be one of the constructive and progressive elements in society.

I regret the tendency that we see, particularly in the West, for farmers to

"move into town" when they have acquired a competency. When they quit work and reside in town they cut loose from their relationships and sacrifice incentive. I hope that the many dispersive agencies will tend to check this migration, by taking to the country the things that men need there. These dispersive agencies are chiefly as follows:

Communication and Transportation—
- Good roads
- Trolley lines
- Bicycles
- Auto-vehicles

Intelligence—
- Telephone
- Rural free delivery (we are much in need of a parcels post)
- Reading-courses
- Traveling libraries
- Periodicals
- Itinerant lecture systems

There is every indication that we are coming to at least a temporary halt in

the rural unrest. We shall expect, therefore, that new centers of social crystallization will develop. Perhaps a recrudescence of the rural school will make it again something like a social center. In parts of New York and New England, the grange hall is rapidly supplying this need. All the dispersive agencies that I have mentioned above will make for social cohesion by arousing a keener desire for it; but I doubt whether this cohesion will result in real village life so much as in the development of a social farm life.

The countryman will always be comparatively isolated, but this need not mean that the country is to be characterized by intellectual poverty. The farmer needs literature,—literature that is bright, true and relevant. Most of the books that he reads—as also most of those that his children study—are made

for townspeople. Where is the fiction that portrays the farmer without overdrawing or caricaturing him? Where are the candid and interesting farm sketches? The farm poems? The writing that will do for the farm what has been done to interest persons in nature? A good technical agricultural literature is now developing, and this is certain to be followed by a new range of literary writing. It is astonishing how utterly agricultural experience has been neglected in literature. Great movements have come and gone, ideas of wide sweep have risen and passed away, unconscious experiments of continental area have been made, industries have developed and have disappeared, discussions on burning questions have caught from schoolhouse to schoolhouse, customs have died out, inventions have been forgotten, systems of farming have been

outlived, books have been written to be stored in old attics, strong men have lived and died, and yet all these treasures of human experience are unknown to the writers and the historians. I never look over my shelves of old agricultural books that I do not feel sure that some day an attractive literature will rise out of the achievements of these neglected rural people. This literature will have a large significance because it will utilize genuine material that has accumulated slowly and naturally and in great part without conscious purpose, and which, therefore, lies very close to original feelings and motives of men.

A fundamental corrective of isolation is the development of a keen intellectual and spiritual interest in the objects and affairs of the country. The nature-study movement, — to use the phrase in its broadest sense—is now evolving this in-

terest. A genuine knowledge and appreciation of nature will in the end be more satisfying than much of the amusement that the town has to offer. This sensitiveness to nature is now developing very rapidly also in the towns, and many townspeople are expecting to take up farming largely to satisfy this desire. I fear that many of these persons will be disappointed, not because they will fail to find the interest in nature but because they will know nothing about farming and the practical affairs of the country; and no doubt some of them will find the love for the town to be deeper-seated than they had been aware. The farmer himself will develop this nature-love slowly and non-theoretically, and it will abide; at the same time, his occupation will be developing out of mere laboriousness, and he will have some strength and opportunity remain-

ing for the enjoyment of his environment. I am sometimes told when I make remarks similar to these that I am idealizing. I hope that I am, for if farm life cannot be idealized, it cannot be recommended; but I hope that the ideals are attainable.

If these remarks mean anything, it is that we need new country institutions developed from the country point of view, not merely city and town institutions transplanted to the country. The country youth must not only know more, but must have a country mind in the broadest sense. His amusements and ideals must be developed in the country and through the country: then the mere money-getting and place-making and entertainment-catering of the city will seem less important to him. We need new schools developed from the country point of view; of these I am to speak in my next

lecture. We also need a new country church, one having an intellectual life that will attract and hold the younger generation and that has in it the spirit of growth and progress. Perhaps this will come, as the schools seem to be coming, as a result of centralization. The greatest hindrance to such a centralization is the existence of several denominations, each with its separate organization and each one relatively weak. It would be a great gain if the centralized school and the centralized church could be developed side by side.

I am always interested in Thoreau's "poetical farmer," not because I recommend his kind of farming, but because of his philosophical point of view: "Minott is perhaps the most poetical farmer, the one who most realizes to me the poetry of the farmer's life, that I know. He does nothing with haste and drudgery,

but everything as if he loved it. He makes the most of his labor, and takes infinite satisfaction in every part of it. He is not looking forward to the sale of his crops, but he is paid by the constant satisfaction which his labor yields him. He has not too much land to trouble him, too much work to do, no hired man nor boy, but simply to amuse himself and live. He cares not so much to raise a large crop as to do his work well. He knows every pin and nail in his barn. If any part of it is to be floored, he lets no hired man rob him of that amusement, but he goes slowly to the woods, and at his leisure selects a pitch pine tree, cuts it, and hauls it or gets it hauled to the mill; and so he knows the history of his barn floor. Farming is an amusement which has lasted him longer than gunning or fishing. He is never in a hurry to get his garden planted, and yet it is always

planted soon enough, and none in the town is kept so beautifully clean. He always prophesies a failure of his crops, and yet is satisfied with what he gets. His barn floor is fastened down with oak pins, and he prefers them to iron spikes, which he says will rust and give way. He handles and amuses himself with every ear of his corn crop as much as a child with its playthings, and so his small crop goes a great way. He might well cry if it were carried to market. The seed of weeds is no longer in his soil. He loves to walk in a swamp in windy weather, and hear the wind groan through the pines. He indulges in no luxury of food, or dress, or furniture, yet he is not penurious, but merely simple. If his sister dies before him, he may have to go to the almshouse in his old age, yet he is not poor, for he does not want riches."

WE NEED THE COUNTRY

Therefore I preach the open country, because it is natural and without affectation. There is very much in the city that we need, but this is so well accepted that there is no occasion to emphasize it: we need to emphasize the things that are free and that are remote from contention and noise. I preach the plain and frugal living of plain people. Yesterday the bill of fare that was put before me at a hotel contained, by actual count, the names of 567 articles. To judge by the names, most of them were inedible. Ten articles are sufficient, and twenty are luxury. I preach the steadiness of country life, its freedom from speculativeness and from great temptation to evil doing. We need the example of all simple and direct lives, even if we lose some of the "polished" manners. We need the freshness

and the spontaneity, and the power to rely on oneself. The day of homespun is past, and the day of the machine has come: danger is that the machine and the formal affairs shall come between us and the essentials. We are too likely to work by proxy and through servants.

With the increasing complexities of civilization, it may be impossible to simplify the machinery of our political life; yet we all have the desire to do so, and we feel that the more direct the institutions the more efficient and enduring they are. The native institutions have largely determined the methods and points of view in great geographical regions;—the New England town meeting, with its ideal democracy; the southern court-house, with its social stratification; the central-west schoolhouse, repeating the democracy of New England but with a freer individualism; the arid-west ditch

meeting, repeating again the democracy, but made strenuous by the urgency of a single vital problem. It is doubtful whether a nation of cities could be a democracy.

I think that we need the example and influence of men who do not live on salary. I have said that one reason why boys leave the farm is because in other occupations they are offered wages or salary, and the risk of livelihood is thereby reduced; but the very lessening of this risk sacrifices much of a man's self-reliance,—it loses him his independence, not only in directly securing the means of support, but, what is more serious, in his attitude toward society. Salary-practice is a concomitant of organization, and it goes with social stratification. The man who receives salary exclusively depends on some one else, and his opinions are controlled, or at least modified, there-

by. Often to a very large extent he loses his autonomy. There is a general feeling among salaried men that they must engage in other business in unsalaried hours, not always so much, I think, because they desire to add to their income, as to satisfy the longing for some greater measure of independence. The farmer is about the only man left who lives directly on his own efforts, without the aid of salary, speculation, or the non-intrinsic profits that accrue from trade. There is a tendency to organize agriculture, and thereby to develop salaries in it; this tendency is no doubt to be commended, yet I look with some apprehension to the effect that it may have on independent effort and opinion.

We need the native love of home. The city or town young man is too often a man of the streets or of the clubs, and he does not marry early. The farm boy

does not fear to take the responsibility of a family, and he does not wait till his income is large and his best energies and ideals are dissipated.

We need the healthfulness and the buoyancy of the country and the open air. It is often said that, as a matter of fact, the city man is physically more perfect than the countryman. This may be true; but it is because the city man takes better care of himself and of his surroundings, not because the city itself is more healthful than the country. The open country should be the ideal place for the making and preserving of physical robustness. Recent statistics in England and Wales show that the comparative mortality figures are lowest for clergymen and farmers, being closely followed by teachers and agricultural laborers, and then, at some distance, by carpenters, lawyers, shopkeepers and others. Certainly

all our people need the open air and the out-of-doors. This is probably truer for Americans than for others. A matron of a large boarding school for girls told me recently that many of the pupils come to her so thinly clad that she is obliged to keep her houses too warm for health in order to make the girls comfortable. This school is an expensive one and the girls come from well-to-do families; it is not a question of expense: the matron said that by many mothers it is not considered "good form" for girls to dress warm. The girls are clad in gauzy shivery stuff, and they therefore become hothouse subjects, withdrawing from the cold and discomforted by every change of temperature.

We magnify the comfort of living indoors. We have made the inside of the house so attractive and so suggestive of ease that the temptation is to go outside

as little as possible, as if the out-of-doors is to be avoided. The abundance of books may keep us indoors. We have so many books even about the out-of-doors that we do not need to go out-of-doors to learn about it. Americans are fond of saying that the Europeans are far behind us in developing the physical comforts of the home. I also am proud of this; but I sometimes wonder whether this is not due in part to our dread of the out-of-doors, and whether this very physical perfection of the house may not still further emphasize the breach that has grown up between ourselves and nature. Most of the interest in nature is more or less sentimental and theoretical and long-range, and ceases when we are in danger of getting our shoes muddy. There is, to be sure, a tendency in American house-building toward an outdoor feeling, but this usually does not extend beyond the ve-

randa, which is really built for protection. We have not yet proceeded so far as the usable garden-room,—in this respect the Europeans lead us. The sedentary indoor life has its sure effects, and we try to correct these effects by means of drugs; and the American is known by his nostrums.

We must constantly return to the native and the indigenous in order to correct our civilization and to direct it. We are in danger of over-refining: we need to go to the primitive for strength and renewal. A new and strong kind of nativeness is no doubt developing in the cities; but we also need the kind of nativeness and essentialness that develops in the country. I am always conscious that there is no soil in the city, but only dirt; the ground must be covered until it is blotted out. When we get away from the soil we begin to get away from simplicity and

directness. We all perceive a growing tendency countryward, coming in response to a universal soul-hunger that the strenuous and complex life does not fully satisfy. Sooner or later, most men come to feel as did the city schoolboy who declared that some day he would live in the real country and would build his house out-of-doors.

III

The School of the Future

THE pupils in a certain school were asked whether they could define or distinguish an educated man. After a long pause, one little girl raised her hand and said that she surely could tell. "An educated man," the child said, "is one that does not work." This homely reply admirably illustrates a popular conception of education,—that it does not put one into direct relation with the affairs of life, as if education and occupation are incompatible.

Most of us will not accept the child's opinion; yet there seems to be a deep-rooted feeling that a person cannot be really educated by means of subjects that have a direct application to the

necessities of living. It was an old idea that education makes a man accomplished. It is the new idea that it also makes him useful; and as all spiritual progress is indissolubly associated with physical welfare, this new education stands for the completer and the larger man.

I have always liked the story of the Adirondack guide, who thought Agassiz an educated man and Lowell an ignorant man, for it is a forcible expression of the fact that there is more than one kind of education. It is still asserted that some education leads to "culture." This I have no desire to dispute, but I do not like the inference that other education does not lead to culture. This question cannot be closely discussed unless one defines what he means by "culture." Much of what passes as culture is very superficial attainment and may be little more than good manners. But breadth

of view, clear reasoning power, good judgment, tolerance, high ideals, sensitiveness to art and nature, devotion to service,—these are of the greatest value, and they may be the result of more than one line of educational effort. The old-time formal and literary attitude, with facility in a particular group of academic subjects, is much to be prized; but sensitiveness to life is the highest product of education.

I read recently in a college paper that "the classics are the source of culture, all culture, and they always have been"; and again: "Greek, once considered the foundation of all culture, is fast dying out, and our whole system of education for the sake of culture and power is threatened with destruction by the ever-increasing flood of materialism in scientific courses, and of practicalism in the professional courses. The task of stem-

ming this flood has given rise to the most vital and difficult problems of the modern university." I wish that we had more Greek, but I do not admit that Greek or any other group of subjects is the sole source of what we ought to know as "culture," nor that "materialism" is a result of scientific courses, nor that "practicalism" is any bar to the highest flights of thought; and it is strange that any person in these days should regard Greek as the one preëminent source of power. All education should lead to culture and to power.

How can a man's mind be trained? It can be trained by being employed in some definite, integrating, and consecutive effort. It matters little what the subject-matter is: if the mind is employed effectively, it will be able to make a still more effective effort. Hard, straight, direct thinking develops the mental

powers, and the number of subjects that can be made the means is legion. Many of the old subjects train the memory chiefly and their results are superficial. "Reasoning power" develops by use. This power ought to be as effectively used by reasoning from problem to solution in biology or physics or agriculture or engineering as in formal philosophy and logic. A man can be trained to think just as accurately by means even of agricultural subjects as by conventional subjects, provided the agricultural subjects are as well systematized and unified and equally well taught. No one subject can have the monopoly of learning, unless we wish to restrict education. The theory of the choice of subjects is now well established, but we still need to liberalize the teachers and the schools. The difference between "technical" and "cultural" education is

essentially one of intention rather than of subject.

If one subject may be as effective as another in training the mind, it will naturally be asked why it is necessary to introduce the new subjects at all, inasmuch as the old are already well established. The answer is that the mere "training" of the mind is not the only purpose of education; but that education should make the man efficient and useful. It should put him into sympathy with common affairs and the questions of the work-a-day world, and it should give him usable information. Education should have a tendency toward something definite; for the educated man, if he is to help and lead the world, must not stand above and aloof from mankind. When only Greek-minded men went to college, it was enough that Greek was taught; but now that physics-

minded and physiology-minded and farm-minded men go to college, engineering and physiology and agriculture also should be taught. I do not suppose that there is any way whereby an examination of the fiber of an educated man's brain could reveal the means by which the mind was trained.

It must not be expected, however, that all these new-time subjects have yet reached their true pedagogical value, although they are rapidly approaching that ideal by being classified and organized. Often the science-teaching is the imparting of mere information. Such is likely to be the case with all new subjects; but this does not at all disprove the assertion that these subjects have high scholarship value when taught as well as they are capable of being taught.

It is a favorite assertion that some education is "liberal." So far as this

word is merely a name to designate a certain group of subjects, no one can object; but if it is the inference that other subjects are illiberal, then the statement cannot go unchallenged. The fact is that the older type of education is likely not to have a liberalizing effect, because it not only confines a man's attention to certain efforts that may be narrow in themselves but often renders him unsympathetic toward those who have not pursued a similar course, and also toward affairs in general. I once heard the president of an excellent literary college say that his institution "educates men, not farmers and blacksmiths." Most persons now think that a college may educate farmers and blacksmiths to be men.

It is most curious that we should ever have considered the concerns of men to be unworthy of study until they had be-

come centuries old and had been more or less imperfectly embalmed in tradition and literature. The most liberalizing course of study is that which puts the man into closest sympathy with the activities and ideals of men in times past and in times present. We ought to recognize the transcendent value of human experience as expressed in its religions, its history, its art, and its literature, and to make it the nucleating agency in the educational system; but it is just as fatal to the highest scholarship and to the best intellectual and spiritual development to have an education exclusively in what we are in the habit of calling the humanities as in what we call the sciences and the affairs: either is incomplete and one-sided, and cannot give a perfectly rounded and rational view of life, or put one into full sympathy with the achievements of the race.

THE SCHOOL OF AFFAIRS

I like the farmer's advice to his son who was leaving for college: "John, be careful not to get more education than your intelligence can stand."

This was the father's way of asking that the son should not get too far away from the actual necessities of life. He had known men to rise to high positions without schooling; he had known others to lead very ordinary or unresourceful lives even with much schooling: he had drawn the conclusion that schooling is related in some causal way to these results. I am afraid that there is more than a grain of truth in the father's conclusion.

There are two kinds of schools,—the institutional school and the school of affairs. The unschooled man, in the father's mind, was trained in the school

of affairs. The untaught farm boy goes to the city and succeeds because he has learned certain things in the daily round of life that are of more value to him than all that he could learn from the books. The ideal training would be the addition of the school work to the real work; but if either one is to be omitted, it should be the school. In the old days the school was a supplement to the home; now it tends to take the place of the home. In many instances the child now spends most of his time in school and in vacationing; and there is little opportunity for the development of the strong native traits that were so pronounced in the old days. I would not have less schooling; but I would advise that the school supply what the home and the business can no longer give. No boy or girl should leave school without the power to attack a question in

actual affairs or to do a piece of work with the hands. I do not consider a person lacking these powers to be well educated, even though he knows all the books. The minister came to see me, and I showed him the garden and the barn. His eye caught the tool-bench. "What a fortunate man you are!" he said. "You can use tools; I cannot do a thing with my hands, except to play golf."

I shall now speak of some of the ways in which the school of affairs trains men, developing qualities and powers that are indispensable to a right life. I shall choose the case of the farm boy because I am most familiar with him and because his relationships are directly with nature, —and the theme of my lectures is the meaning of the outlook to nature. In making these statements, I have no desire to glorify the farm boy or to magnify the advantages of farm life: I speak

of some of the positive training processes of the farm only in order to show that the unschooled man may be in a very true sense an educated man, and to enable me thereafter to make some suggestions for the schools themselves. Unlovely traits are often bred on the farm; but these faults are not necessarily inherent in farm life and they will be fewer in the future. Nor do I wish to be understood as implying that the farm-bred man is to be as indispensable to the city as he has been in the past. The city is now finding itself, and is developing strong men of its own; but even in the city many of the strong traits will also be developed in the school of affairs, for everywhere the business of life educates the individual.

(1) The farm boy's activities are direct. He deals with real, actual, useful things, problems, and events, and devel-

ops practical knowledge and ability. He can "do" things. City boys are likely to deal with pictures and models and descriptions, and with made-up exercises. The farm boy must overcome his own difficulties for himself. Every day brings him a hundred of these natural problems. He tips over with a load of hay in the back lot. Does he go to the village to consult an expert or to the library to look up references?

He lives close to the raw materials, deals first-hand with them, and his methods, although sometimes primitive, are short and effective. I am impressed with the indirectness and expensiveness of much of the work in cities,—those who do public work especially seem usually to be killing time, and the methods by which they are employed seem to a countryman to be political and circuitous and to involve a great waste of efficiency.

(2) The farm boy is trained to be industrious. If he turns out to be lazy, he finds no system of political patronage to float him along. It is commonly thought by outsiders that the farm boy's life is hard. It is true that it is often harder than it need be; but in general it is hard only to those who shudder at the thought of work. Eight-hour men may think of it as hard. In Chicago, a short time ago, I was amused to see "laborers" roosting on the iron fenders in front of labor-bureau offices, where most entertaining signs were hanging around them and beneath them offering attractive work at high wages and with free transportation; it was apparent that the men were not looking for work but for the job that had the least work in it. The farm boy has little opportunity to choose the easy jobs. He is confronted by the entire situation,—the series of

problems imposed by the seasons and the years. The farm-course is complete in itself and its duties must all be met, without thought of escape; therefore, it is a system of natural and native discipline.

One of the great questions of the city is that of idleness,—one cannot see the floating youth on the streets without being impressed with this fact. The school hours often are reduced to a minimum, the child has no serviceable employment, and he drifts; the farm boy has his chores to do after school.

I cannot leave this subject without again emphatically denying the common notion that the farm boy's life is mere drudgery. Much of the work is laborious, and this it shares with all work that is productive; for the easier the job the less it is worth doing. But every piece of farm work is also an attempt to solve a problem, and therefore it should have

its intellectual interest; and the problems are as many as the hours of the day and as varied as the face of nature. It needs but the informing of the mind and the quickening of the imagination to raise any constructive work above the level of drudgery. It is not mere dull work to follow the plow—I have followed it day after day—if one is conscious of all the myriad forces that are set at work by the breaking of the furrow; and there is always the landscape, the free fields, the clean soil, the rain, the promise of the crops. Of all men's labor, the farmer's is most creative. I cannot help wondering why it is that men will eagerly seek work in the grease and grime of a noisy factory, but will recoil at what they call the dirty work of the farm. So much are we yet bound by tradition!

(3) The life of the farm boy is varied. The farmer handles an entire business,

not some small part of a business, and he is therefore able to lead something like a normal and naturally rounded life. In an age of minute division of labor, this is important, for it tends to develop many abilities rather than to make a man a cog in a wheel. I often hear it said that the farmer's life is monotonous. This is true only so far as it may confine his activities to one locality. His work does not compare in monotony with that of the average workingman or the average business man; but other men may have more divertisement provided for them,—and for this the farmer will have time and desire when he comes to organize his time and to develop a greater sensitiveness to his surroundings. To a large extent, he must provide his own diversion. The farm work itself, while of the same general kind year by year, is endlessly varied in its details, and

this is the very reason why the business is so difficult for the unresourceful man.

(4) The farm boy's life is simple. Usually he has only the essentials. No doubt he has been confined too closely to the bare essentials; but in adding the luxuries we must be careful not to eliminate the educating power of a moderate and plain life, for this is the natural life. Superfluities are dissipating of one's energies, and weakening of the moral fiber, whereas simplicity is economy, and makes for straightforwardness and therefore for power.

One's amusements have much to do with his power, for they force their own example on the mind and they either divert or conserve one's energies. And here is where the farm lad has a great advantage: he is not diverted with too many side interests by being consumed in social affairs. He is able to go at his

work with singleness of purpose, and it is no part of his thinking that he must be forever amused and entertained. Too much entertainment is a serious fault with our time. The things that strike me most, as a countryman, when I go to the city are the "attractions,"—all the gewgaws and garish lights, and rackets of musical instruments, and exhibitions of freaks, and the glorious signs, and the appealing show, and the hosts of persons who make it their business to entertain those who cannot entertain themselves and fleece those who want to be fleeced, and all the things to buy that nobody ever should want. And then I marvel at the enormous waste of human effort, and at the insincerity and indirection; and I wonder what might be the state of civilization were half of this energy and shrewd ingenuity to be applied to effort that would make for usefulness. I am

aware that all this display is but the drift-wood on a sea that is calm and unruffled beneath the surface, and that a good part of its purpose is to attract the visitor; I know the sweet and strong lives that are behind the closed doors; but the cheap and insincere street life is a fact nevertheless, and it is a natural entertainment-product of the city.

It is always a relief to get back to the unpretentious music and entertainment of the country folk. There is a sincerity about it that I seem to miss elsewhere, and usually also a kind of native heartiness and simplicity that satisfies the soul. I always enjoy the unlabored melody of the singing at farmers' meetings, with the absence of trills and effort; in comparison, the elaborate music of many of the city churches, with its hired singers and its instruments, seems not to be worship so much as performance.

With all this untutored experience there comes a hardiness and a natural courage that is not shaken by weather or by common discouragements. As civilization provides the means of rapid locomotion, so it develops the desire to avoid the natural environment of our lives, and we fly South in winter to escape the cold, and North in summer to escape the heat. So far as this means change for health and recreation, it may be commendable; but when it is a desire merely to escape weather, it tends to breed weakness and evasion of duty.

(5) The farm effort is steady. It is characterized by perseverance and stableness. It is probably more completely divorced from the gambling instinct than any other occupation,—a fact well attested by the frequency with which the farmer of the past generation was "taken in" by the city sharper. This steadiness

makes for continuous effort when the boy takes up some other business. The real farmer goes into farming as a life-work, not as a makeshift, nor with any idea of ever changing his occupation.

(6) The farm boy is compelled to be frugal of his money. The farm is capable of earning more money than it commonly produces, and the farmer, being a producer rather than a trader, does not receive his share of the wealth that he helps to create; but I hope the time will never come when the merit of farm life will be only its wealth. The love of ease and of pleasure comes with much money, and it is growing, and it is also fatal to the greatest success; for necessity is the best of disciplinarians. I know it is now the fashion to underrate the importance of careful economy in money; but one cannot be spendthrift of money without being spendthrift of energy. In my

teaching experience, I have always been conscious that the farm boy will accomplish as much with a dollar as the city boy will with two dollars, and will make as good use of himself at the same time.

(7) The farm boy develops slowly and naturally. He has time to grow and mature. His youth is long, in a time when our rapid civilization tends to eliminate youth. What schooling he gets has time to soak in and to become a part of him. He comes to manhood fresh and with something to learn. He is in the midst of things that are not forced beyond their time, for trees and birds and the grass grow naturally and in their seasons. The constant contact with farm animals develops a kind of direct and intrinsic naturalness that can scarcely be acquired in any other way.

(8) He has an honest appetite and an intrepid digestion. The farm diet no

doubt needs correcting, but in spite of its faults the average farm boy is rugged and unpampered. Later on, he may suffer from the lack of proper physical care of himself, but the surroundings themselves all make for a resistant physique. At all events, the farm youth does not need music and pleasant-tasted trivialities to encourage the appetite. Eating is itself sufficient entertainment if hunger is keen and digestion good.

(9) If the boy lives on a good farm that is paid for, he is trained in independence, for the business and the hours are managed by the family. There is no extraneous boss. In case of need, the farm can provide the necessities of a family. Many of the strong individual peculiarities of the farmer are due directly to this independent life: he does not need to patronize. This independence, combined with isolation, often

allows very undesirable traits to develop; but the general result is the producing of characteristics that we need to conserve for the good of the race.

(10) The farm boy is a democrat. Of all our people, he is probably freest from any thought of social stratification. He associates with his fellows on terms of equality, and is free from haughtiness and snobbishness. The farmer has no servants, but " hired help," and the help eats at the table. More than this, the farm boy runs his own errands and waits on himself; and all men are equal.

(11) The farm boy has a family life. He is essentially a home boy, not a street boy. You can fill in the picture.

THE EVOLUTION OF SCHOOLS

I have now endeavored to give expression to the fact that the customary activities may be made to have true educational

value, and that some activities are better than others in this respect; and it is the natural inference that the institutional schools must coördinate and coöperate with these affairs if they are to arrive at their highest efficiency in the training of men. Before pursuing this particular theme further, however, I must call attention to the fact that the general progress of the schools has been from the classes to the masses, or a constant process of democratizing; and this will explain why it is that affairs are so late in coming within the realm of teaching. Education was first for the few. It has been essentially ecclesiastic and aristocratic. Church schools and private schools were for centuries practically the only schools. The university and the college grew up in response to the demand of these special classes. The institutions invited certain men and no women. These men, for the

most part, were not those who performed the world's labor. The world still looked to Greece for its ideals and its inspiration. The instruction in the institutions, therefore, followed traditional lines, and it necessarily had little relation to the daily living. In fact, its divorcement from the common life was really considered to constitute much of its merit, for thereby it stood for "ideals" and for "culture." This type of education, which is still exclusively adhered to in many places, is only a supplement to the daily living.

The history of education for the past two hundred years reveals a constant encroachment of those subjects that have relation to every-day life, and a continuous resistance on the part of the old systems. Law and medicine were among the first of the new subjects to gain a foothold. Chemistry and natural philoso-

phy fought their way in. Only a little more than a century ago chemistry contended for admission to Harvard College, and gained entrance only under protest. One by one the occupations have found expression in the schools. Little by little the schools have come to the people. The history of these ideas may be grouped around a few emphatic points.

(1) The evolution and fulfilment of the idea that it is the duty of the state, rather than the church, to provide free education for all the people. This idea found full expression in the wise political philosophy of Jefferson, and also embodiment in the Ordinance of 1787, governing the Northwest Territory. It was Jefferson's conception that the state should provide for a public school system culminating in a university; but it is a significant fact that the part of his scheme that reached fulfilment was the university

and not the elementary schools; and the institution at Charlottesville is one of the best of the many monuments to his fine genius.

(2) The rise of equal opportunity for women, to whom the public schools shall be opened as freely as to men. This evolution of educational ideals is not to be confounded with discussion of mere coeducation, for coeducation is only a means, and it may be desirable or undesirable, according to circumstances; but it is the development of the emancipation of woman, giving her opportunity.

(3) The gradual development of the idea that the state, in order to protect itself, must compel its children to attend school. The great growth of cities, with their hotbeds of crime and the inquisition of child labor, has brought the whole subject of compulsory education to the fore.

(4) The enormous development of the scientific spirit in education. This is primarily the result of the growth of scientific inquiry, whereby we take nothing on authority but everything on evidence. The marvelous extension of knowledge, arising from research, has redirected and reorganized all our activities, and therefore has necessarily affected all our institutions. This rise of scientific quest has challenged the accustomed means whereby men are educated. It has almost seemed as if the scientific and technical subjects are to drive out the ancient language and literature and philosophy; but we know now that while the new has come to stay, the old has been revitalized and that its efficiency as an educational means is to increase rather than diminish. Nearly every subject now is studied and taught by the scientific method, and mere dogmatic teaching is passing away.

It has been the great merit of the science-teaching that it has introduced objects to be handled and studied. It has developed the laboratory idea, whereby the student proceeds naturally from the concrete to the abstract, by means of working at a real personal problem. In recent years, the evolution point of view has modified school work, for it has enforced the necessity of the natural order. Since the child is a developing animal this is a great gain, for it emphasizes the importance of original and essential experience. A natural consequence of laboratory work was "object lessons" and "manual training"; these have been great advances, but they are not sufficient, as I shall presently try to show.

(5) Education has been seized of the missionary and altruistic spirit. We would not confine the influence of the college or university to those persons who have the

means and desire to come up and sit in its influence. We would extend this influence; and thus has been born the extension movement which is so much a part of our time. By means of itinerant lectures, publications, correspondence courses, we are spreading the elevating and fraternizing spirit of the universities. We believe that every man and woman should be touched with the new ambition and the new ideals that education can impart, whether or not they attend what we call "schools."

(6) The formulating of the idea that education must be related to the daily life. This is a necessary result of the growth of the belief in popular education, for the masses must live by occupation, and a man's occupation does not make him better than another man. This idea found its full expression in the Land Grant Act of 1862, which is the most

important endowment ever made for education,—less because of its munificence than because of its purpose. It is the purpose of this act "to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life," and in order to accomplish this it directs that the institutions founded on it shall "teach such branches of learning as are related to agriculture and the mechanic arts." This great instrument marks the establishment of technical and professional education on the basis of the public welfare; it rests on the theory that every citizen in every occupation should be a trained and educated person. What the Land Grant Act has accomplished for industrial education of a college grade, the public schools must now establish for the masses of the people, — and this will constitute the School of the Future.

THE NEW SCHOOL

A prominent school man said to me recently, "Practically no one goes from the high schools into the trades." This may be because so few of our youth go through the high school, or because high schools are not in direct vibration with the trades. My friend meant to infer the latter. No doubt education should be supremely natural, and it can be natural only when it makes use of the forces and objects in the neighborhood. The principal of an old academy told me last fall that he was planning to teach dairying in the school, both as a scholarship study and as a means of aiding the industry of the community. I asked him how he could teach it without a laboratory and apparatus. "I have the ideal laboratory," he replied, "because it is an actual enterprise: it is the creamery

yonder." I recognized that he was a prophet.

The science-teaching, as I have said, developed the laboratory. Of course the laboratory is fundamental, yet it is not sufficient if we are to teach also by means of affairs. It is only a collection of materials with which to work,— formerly dead things, but now live things. We cannot teach affairs in collection-laboratories: we must have actual shops, actual enterprises, actual fields, actual gardens,— not the materials brought to the pupil, but the pupil taken to the materials. Even the farm and the shop may be made means of education.

"Object lessons" are excellent means of developing observation, but the "objects" are largely make-believe or are taken out of their natural place and thereby lose much of their meaning. The new "nature-study" tries to place the

pupil with the objects and phenomena as they occur in nature; and so far as it does this, it is fundamental and abiding. The persistency with which nature-study is treated as if it were object-teaching or mere laboratory-teaching, shows how difficult it is to extend the sphere of the school beyond the schoolhouse.

The education designed by the Land Grant Act was essentially technical and professional. For many years the result was largely information-teaching; but the experimental era is now passing, and, while still intensely practical, this teaching is developing greater scholarship value. The general elementary schools cannot teach trades or professions; but they can use the materials of trades and professions as one of the aids to scholarship, and while doing so they will give such a "set" toward the occupations as will attract all youth and will at the same

time make them more efficient in their own behalf and also in behalf of civilization.

In an agricultural community, for example, all the farms of the neighborhood will afford training in the elements of failure and success. There is no reason why the pupils should not know why and how a man succeeds with his orchard or dairy or factory, as well as to have the cyclopedia information about the names of capes and mountains, dates, and the like; and why should not every good farmer explain his operations to the pupils? Such work, if well done, would vitalize the school and lift it clean out of the ruts of tradition and custom. It would make a wholly new enterprise of the school, rendering it as broad and significant and native as the community itself, not a puny exotic effort for some reason dropped down in the neighbor-

hood. When the public schools begin to touch experience and pursuits in a perfectly frank and natural way, we may hope that persons who have money to give for education will bestow some of it on elementary and country schools, where it will reach the very springs of life.

It will be seen that all this is a much larger idea than manual training alone. Good as manual training is, it will inevitably lead to something that articulates directly with the lives of the pupils and the needs of the community. It is now passing from the make-believe into the real, from mere hand-training into actual applied problems.

All this constitutes the new "industrial education,"—an education that uses the native objects and affairs of the community as means of training in scholarship, setting the youth right toward life, making him to feel that schooling is as in-

digenous and natural as any other part of his life, that he cannot afford to neglect schooling any more than he can neglect the learning of a business or occupation, that schooling will aid him directly in his occupation, that the home and school and daily work are only different phases of his own normal development, and that common duties may be made worthy of his ideals. Unfortunately, the term "industrial education" is ordinarily understood to mean direct training for the trades; therefore it would be a great gain to a clear understanding of the subject if some other term could be used for this new and pedagogically sound idea. The term nature-study will not answer the purpose, for this is commonly understood to cover what we know as "nature," not including industries and affairs. In my own mind, the term nature-study is large enough, for I think of "nature," in

this relation, as expressing the natural method of education, whereby the pupil is educated at first in the terms of the world he lives in; but the term has been so long used with another signification that it cannot be pressed into service for the larger and fuller idea. "Environmental education" has been suggested; but this would always have to be explained, it sounds pompous and theoretical, and the environment is usually considered to comprise only the "natural" surroundings and not the parts established therein by man. I wish we might say "natural education," but this is indefinite and would always be disputed. For the time being, therefore, I see no better term than industrial education, with the reservation that it mean much more than commercial education, or than manual and technical skill for use in the arts and trades,—

that it mean true education in aiding mental development, supplying usable information, affording manual and physical training, developing sympathy with the work of the world, arousing enthusiasm for service.

I cannot forbear to say a word about this last category,—enthusiasm. I find myself with a constantly growing feeling that much of our educational practice suppresses exuberance and spontaneity, and crushes out originality. This is particularly true of the older types of formal education. The pupil or student is so continuously overawed, or at least overmastered, by the opinions of others, as expressed in books and literatures, that he hesitates to express an opinion of his own, lest it shall not fall into the well-worn ruts. More than this, educational practice has been so dominated by the bogy of "mental discipline" that enthu-

siasms have been neglected. Yesterday a man said to me that he had taken the botany in a great university but graduated without love of plants, and had taken the astronomy without having learned the glory of the heavens.

The new natural or industrial education should do much to correct all this, for it puts the pupil into touch with living questions and in line for service, and it develops the value of evidence and of proof. The activities cannot be contained in books nor smothered by "authority." They put the man to work; and they should leave him possessed of his natural spontaneousness.

This modern educational process is the active method as distinguished from the sit-still method. It arouses, stimulates, individualizes the learner, developing its own mental movement. The older method is largely one of repression and subjuga-

tion. It is little less than barbarous to keep children sitting all day on benches.

This industrial education, then, is not the teaching of trades; but the surroundings, the trades and professions and natural phenomena afford some of the means. I have never seen the reasons for the introduction of such studies so forcibly expressed as in the agricultural part of the Illinois State Syllabus, for which they were written by Eugene Davenport, Director of the Illinois College of Agriculture. With slight modifications, these categories would apply to industrial education in general as well as to agricultural education. It will be seen that these subjects are justified on the ground of good public policy, not on agricultural reasons alone:

"1. To cultivate an interest in and instill a love and respect for land and the occupation of agriculture.

"2. To create a regard for industry in general and an appreciation of the material side of the affairs of a highly civilized people.

"3. To cultivate the active and creative instincts as distinct from the reflective and receptive that are otherwise almost exclusively exercised in our schools.

"4. To give practice in failure and success, thus putting to the test early in life the ability to do a definite thing.

"5. To train the student in ways and methods of acquiring information for himself, and incidentally to acquaint him with the manner in which information is originally acquired and the world's stock of knowledge has been accumulated.

"6. To connect the school with real life and make the value and need of schooling the more apparent.

"7. As an avenue of communication between the pupil and the teacher, it

being a field in which the pupil will likely have a larger bulk of information than the teacher, but in which the training of the teacher can help to more exact knowledge."

This type of school effort is already under way. The introduction of kindergarten, manual-training, nature-study, and other ideas, is the beginning of the new order. Social studies, domestic science work, and other really vital subjects are invading the schools here and there. Natural science teaching now has a nature-ward look. Just how and when all these ideas are to work out to something like completeness and perfection, I have no means of knowing, and, in fact, it is a question with which I am only remotely and theoretically concerned. The beginning is here: I want to help.

I have no complaint to make of the schools, but rather all praise to bestow.

They are in a stage of evolution. They have come down from the college and university, and are still essentially exotic; but no plan of so-called reform can be expected to remodel them. We are not yet ready to have them extensively remodeled; and it is probably true that the greatest speed will be made by a moderate gait.

I insist only that the new point of view must come. Presently even the country schoolhouse will have a voice, and it will say:

I teach
The earth and soil
To them that toil,
The hill and fen
To common men
That live just here;

The plants that grow,
The winds that blow,
The streams that run
In rain and sun
Throughout the year;

And then I lead
Thro' wood and mead,
Thro' mould and sod
Out unto God
With love and cheer.
I teach!

THE RURAL SCHOOLS

The new education is to be related to indigenous conditions and affairs. In many directions great progress has already been made; the least progress has been made in those circumstances that are concerned with real country life, and therefore it is important that I say a few words about the rural schools. In speaking of rural schools, we usually have in mind the "district schools." These district schools are said to be very inadequate. This I will admit, in general terms; but there is something in their directness and simplicity that we ought not to lose. They are inadequate chiefly

because the funds are insufficient. With a quickened public sentiment we may expect a larger amount of school money to be raised by local taxation, for taxation in support of country schools is usually low; but as it is, these small district schools seem to be a passing institution. The older children are now going to the town or hamlet schools. The old district school is losing its power and is becoming essentially a primary school; as such, it is likely to persist for some time, but consolidation of school interests, either under statute or by custom, is destined apparently to eliminate most of the one-teacher schools.

The consolidated and graded school need not necessarily be in a village, although it is probable that the development in the thickly settled eastern states will be in that direction. Merely to illustrate the tendency in rural school

development, I quote from the last Report of the Public Schools of Missouri (1904): "The graded rural school has come in Missouri. Every year the number will be increased. Wherever there is good county supervision progress is most rapid. This school is located in the southwestern part of Jasper county and called, 'The Range Line School.' It is situated in Jasper county midway between Joplin and Webb City. Though the district contains no town or village it is thickly populated and has a school enumeration of nearly two hundred, and an assessed valuation of nearly $160,000. The house is a four-room structure, one story in height, and built of Jasper county white limestone. The rooms are large, well arranged and lighted from one side only. The hallways are commodious, and the cloak-rooms and the library-room are ample in size and conveniently lo-

cated. The building has a complete ventilating system and is heated with hot air. The furniture is modern. The school has a splendid library and it is being rapidly increased. The house is surmounted by a five-hundred-pound bell. The building is constructed on the 'institutional plan,' and is used as a place for holding public meetings. Between two of the rooms is a disappearing partition and when the rooms are thrown together they can be made to hold very comfortably two hundred and fifty people. The building was finished October 1, 1904, and cost $6,000. Three teachers are employed this year. The school is well organized and has nine grades."

It may be interesting to know just what is taught in the average district school in the East. I will give the daily program in two such schools in New

York state as reported by the teachers. These reports will show what the teacher's day comprises, and how much or how little relevancy the school has to the lives of the pupils; and they will make it plain that there is practically no place for industrial work in the small rural schools as at present organized. The first distinct progress, even in the teaching of subjects related to agriculture, is to be made in the town or in the centralized schools.

"There are twenty children registered in District No. — this year, ranging in age from 6 to 15. They represent five grades, most of them being in the sixth.

"I cannot give you a program with the number of minutes devoted to each class, as the time varies according to the work being done and the amount of individual work I may find needful.

"The following program is followed:—

Scripture reading and song.
Reading, first grade . . . . . 2 pupils.
Reading, second grade . . . . 4 pupils.
Reading, sixth grade . . . . . 12 pupils.
American history . . . . . 2 pupils.

Recess

Arithmetic, second grade . . . 5 pupils.
Arithmetic, fourth grade . . . 1 pupil.
Arithmetic, sixth grade . . . . 12 pupils.
Arithmetic, seventh grade . . . 1 pupil.

Noon hour

Singing.
Physiology, seventh grade . . . 1 pupil.
Reading, first grade . . . . . 2 pupils.
Reading, second grade . . . . 4 pupils.
English, second–fourth grade . 6 pupils.
English, sixth grade . . . . . 12 pupils.
English, seventh grade . . . . 1 pupil.
Penmanship . . . . . all.

Recess

Geography, fourth grade . . . 2 pupils.
Geography, sixth grade . . . . 11 pupils.
Geography, seventh grade . . . 2 pupils.
Spelling, sixth grade . . . . . 13 pupils.
Spelling, seventh grade . . . . 1 pupil.

"The sixth grade has had forty lessons in physiology and the first and second grades have their spelling in connection with their reading lesson. One of the pupils in the first grade is about ready for a second reader; the other is a beginner. Two of the second grade have commenced their third reader and others are still reading in second readers. The sixth grade is reading Barnes' Fifth Reader for the second time and usually reads an entire selection for the day's lesson. The class in American history is just beginning the War of the Revolution, as it was late in the fall before they took up the subject. The second and fourth grade arithmetic classes have begun working in Milne's Elementary Arithmetic. The sixth grade is reviewing fractions. The pupil in the seventh grade has just begun percentage, arithmetic being her weak point.

"As for equipment, we have Webster's New International Dictionary, The People's Encyclopedia in six volumes, the Youth's Library, new, and sixty odd volumes of older books, an old map of New York, a battered globe, etc."

The other school of which I will give a report is of a better grade. "It is about two and one-half miles west of—— village. The district is one and one-half miles in length by two in width. Within this area live about thirty-two well-to-do farmers of American and Irish descent.

"The only industry besides farming that is carried on in this district is the making of maple sugar. There are five large sugar orchards, three of which are within a few minutes' walk of the school.

"In the extreme eastern part of the district is a large brick building used as the county poorhouse, in which are no children of school age.

"The schoolhouse is very pleasantly situated about in the center of the district, on the south side of the main road. There is a pretty winding brook flowing past the western boundary of the school grounds.

"The grounds are in fair condition. There are a dozen trees scattered about the grounds, four of which are planted in line with the main road. These trees have all been planted within the last fifteen years. There are no vines or shrubbery of any kind except one rose bush, which is a little distance from the flagpole, which stands near the center of the yard, and from which the American flag floats on Mondays and holidays as a silent reminder of the work to be done, in the near future, by the children who sport and gambol around it all unconscious of the stern duties which await them.

"The schoolhouse is situated on the south side of the grounds. It is about twenty-four feet by thirty feet. It has eight windows, which admit light enough, even on dark, stormy days. It is painted a yellow-brown and trimmed with white on the outside, while on the inside the walls and ceilings have not been painted for some time, and certainly need one coat at the present time.

"The seats and desks are twenty-four in number, deeply scarred, clumsy, and old-fashioned.

"The house is heated by a large stove, which stands in the middle of the room. The ventilation is very poor.

"The material and apparatus are as follows:—Two fairly good blackboards, one twelve-inch globe, one map of the United States, one of the hemispheres, and two charts touching on all the common school subjects; also a library of

twenty-five books, and a People's Encyclopedia in six volumes.

"Twenty-five bright, healthy pupils enjoy the advantages and the disadvantages of this school. The children are very punctual in attending, sickness being about the only excuse. I am more fortunate than some teachers, as I keep the children all day, not excusing any until the parents call for them about four o'clock.

"The district pays a janitor to do the sweeping and the building of the fires.

"My daily program is as follows:

9:00 to 9:10 . Roll call and Morning exercises.
9:10 to 9:20 . General questions.
9:20 to 9:30 . Blackboard and Primer classes read.
9:30 to 9:45 . Fifth reader class recite.
9:45 to 9:55 . Fourth reader class recite.
9:55 to 10:05 . Third reader class recite.
10:05 to 10:15 . Penmanship.
10:15 to 10:30 . Recess.
10:30 to 10:40 . Primary numbers.
10:40 to 10:50 . Advanced primary numbers.

10:50 to 11:10 . Intermediate arithmetic.
11:10 to 11:30 . Advanced arithmetic.
11:30 to 11:45 . Primary spelling.
11:45 to 11:55 . Intermediate spelling.
11:55 to 12:00 . Advanced spelling.
12:00 to 1:00 . Noon intermission.
1:00 to 1:05 . Questions.
1:05 to 1:20 . Physiology.
1:20 to 1:30 . Primary reading.
1:30 to 1:40 . Fourth reader class recite.
1:40 to 2:00 . Third reader class recite.
2:00 to 2:15 . Drawing.
2:15 to 2:30 . Recess.
2:30 to 2:45 . Advanced geography.
2:45 to 3:00 . Intermediate geography.
3:00 to 3:10 . Primary geography.
3:10 to 3:25 . Advanced language or grammar.
3:25 to 3:40 . Intermediate language.
3:40 to 4:00 . Primary language.

"This closes the day's work, both for the children and myself. I have taught in this school for the past three years."

It will now be worth while to enquire what pay the rural school teachers receive. In one school commissioner's district in New York state there are 144

teachers. Of these, 72 are in rural schools of one teacher, and of these 72 only six are men, receiving an average of $32 a month, and 66 are women, receiving an average of $31.11 per month. In this district are seven union schools employing from three to twenty-seven teachers each. Sixty-one of the teachers are in these schools, of whom nine are men. There are eleven teachers, all but one of whom are women, employed in the village common schools of two or three teachers each. The principals of the village common schools are women, with one exception, and receive an average monthly salary of $43.20. The six assistants in the five schools of this grade receive an average monthly salary of $35. The average monthly wages paid the entire number of teachers, 144, is $35.48, notwithstanding that in the number there are seven men principals who receive an

average monthly salary of $91.33⅓. The local school-tax rates were as follows: for the union school districts, 10.39 mills; village common school districts, 5.14 mills; rural school districts, 4.58 mills.

All teachers in the union schools contracted for a full school year of ten months. With one exception, the teachers in village common schools contracted for a full school year of eight to ten months. Of the rural school teachers, two contracted for ten months, four for nine months, eight for eight months, one for five months, twenty-four for four months, and twenty-three for ten to twelve weeks.

The minimum wages should be considered. Of the teachers included in the foregoing summary, two were teaching at $6 per week — both holding training-class certificates with less than high school education. Seven received

$6.50—four training-class and three third-grade, and all with less than high school education. Thirteen received $7, of whom four were training-class, one first-grade, six second-grade and two temporary licenses, and six of the number were high school graduates. Fifteen received $7.50, of whom seven held training-class certificates, one a first-grade, three second-grades, one a third-grade, one a temporary license, two normal diplomas; five of these were high school graduates. Twenty received $8, of whom nine held training-class certificates, four first-grades, five second-grades, one a third-grade, one a normal diploma; eight of them were high school graduates. Five received $8.50, of whom two held training-class certificates and three second-grades, and not one had as much as a high school education. Four received $9, of whom one held a training-class certificate, two

first-grades, and one a second-grade; three were high school graduates. Three received $9.50, of whom one held a training-class certificate and two second-grades; two were high school graduates. Two received $10, of whom one held a third-grade certificate and one a training-class certificate, and one of them was a high school graduate.

The commissioner of the district, who compiled the figures, writes as follows: "To me the most discouraging feature of this exhibit is the fact that wages appear to bear no direct relation to qualifications and efficiency. The two teachers receiving $6 were, on the whole, rather superior to the two receiving $10. It seems to me that the average efficiency of those receiving less than $8 was quite equal to the average efficiency of those receiving more than $8. As a class, those receiving $8 were the most efficient."

It will be seen from the foregoing figures, representing an average rural community in New York state, that schoolteachers receive less salary than is paid first-class stenographers, and that the tenure of office is not likely to be any more permanent. These figures illustrate the fact that teaching is not yet a profession, particularly in the minds of the majority of rural teachers, but is to a very large degree a makeshift and a temporary occupation. It is useless to expect any very great uplift in the work of the rural schools until the schools themselves become stronger economic and social units; and it now seems as if this must come about by some system of centralization.

THE WAYS AND MEANS

It may be admitted that this industrial kind of schooling is desirable, but it will be asked how it is to be brought about,—

where are the schools in which it can be taught, and where are the teachers who can teach it? These questions are asked me again and again, as if they raised difficulties that are insurmountable. But I have never felt that these difficulties are of primary importance. The essential point is to convince the public of the necessity of the new kind of education: the means will work themselves out just as they have in all other enterprises. The demand for teachers will develop slowly, and with the demand teachers will begin to prepare themselves; and as soon as the demand becomes well established, special facilities for training the teachers will arise. It would be reversing all laws of natural development if teachers should be trained before the need of them had become concrete; and therefore I do not wish to set up straw men or to pre-judge the obstacles.

I am constantly told, also, that the schools are already overcrowded, and that new subjects cannot be added. This shows a lack of apprehension as to what the coming education is: it is not to be merely "added to" present "courses of study," but it is in time to reorganize courses of study and even to change the point of view on education. It is to make a new kind of school, with new methods of work, new programs, and the formal book work is to be only a part of the system. At first, it will be a process of adding to and correlating with, as at present; but as the new point of view and attitude develop, the essentials will assert themselves and the schools will be gradually moulded over. Just now, our school courses are overcrowded, and new subjects are always being pushed in. The difficulty is that we are trying to engraft the new pedagogical ideas on the old

system; in time the old system will go, an indigenous system will take its place, and the child will be allowed to develop freely and naturally, with no overworking.

The first thing needful to bring about the newer and more effective education is the change in point of view,—the purpose to begin the educational process with what is near the child's life, rather than with what is remote. The second is better teachers, and these can be had as soon as the work is more concrete, the pay better, and the office-tenure more satisfactory. The third is better equipment in the way of buildings, grounds, shops, apparatus, and books. The fourth is to utilize, as an adjunct to the school, whatever enterprises may exist in the community.

In equipment, we need to emphasize the value of land. It is pitiable to see how small and scant are the bits of earth

that surround our schoolhouses. Even in the open country there is the same stint of land,—still another illustration of the lack of any vital connection between the school and the life of the community. Often it seems as if the country schoolhouse were placed with reference to economizing the cost of land,—land that, if sold, might bring as much as thirty or fifty dollars an acre! I once taught a district school that was set on an island of hard ground in a swamp; and again one that stood on the side of a sand hill. I know of country school grounds that are scarcely larger than the building, and lying directly against the highway at that, as bare as the moon, and in a place that would not be given to any other important building. In many a country school, the only playground is the public highway, and sometimes that is unfit for even highway uses at many

times of the year. A site that is not good enough for a good country home is surely not good enough for a good country school, and the school ground should be at least as large as the home ground. I should put one acre of land as the lowest possible limit for a country school. This ground should be the park for the neighborhood, with an attractively planted collection of trees and shrubs, and this collection should be more useful to the school than is the mere apparatus to be used indoors. It is amazing how we have deprived our children of room, even when there is room to spare, and how completely we have committed ourselves to the idea that schooling is an affair of the inside of a building.

This brings me to the school-garden, to an outdoor area where the children may work with actual problems. Such an area will be an essential part of school

equipment. It will be an additional room or laboratory, not maintained primarily to teach the children gardening but to be utilized for its educational uses. It will do much to place the school in proper relation to its natural problems and will be an intermediate stage between the schoolhouse and the larger environment of the neighborhood. Various kinds of extension gardening will soon be important agencies in civic and educational work: they will furnish occupation for the unemployed; utilize waste lands; afford health-giving employment at hospitals; add interest to parks; augment the beauty of the city or town; encourage thrift and tidiness in home grounds; increase the efficiency of schools.

The last category is the one that most interests us at this moment; therefore I will state some of the specific

ways in which the school-garden may be expected to forward school work. It supplants, or, at least, supplements mere book training; presents real problems, with many interacting influences, affording a base for the study of all nature, thereby developing the creative faculties and encouraging natural enthusiasm; puts the child into touch and sympathy with its own realm; develops manual dexterity; begets regard for labor; conduces to health; expands the moral instincts by making a truthful and intimate presentation of natural phenomena and affairs; trains in accuracy and directness of observation; stimulates the love of nature; appeals to the art-sense; kindles interest in ownership; teaches garden-craft; evolves civic pride; sometimes affords a means of earning money; brings teacher and pupil into closer personal touch; works against vandalism; aids

discipline by allowing natural exuberance to work off; arouses spontaneous interest in the school on the part of both pupils and parents; sets ideals for the home, thereby establishing one more bond of connection between the school and the community.

It may be asked just how these newer subjects are to be taught. There certainly will be no hard and fast method; for method is only incidental, and all theories of pedagogy go down before a good teacher. I am not troubling myself about the details, for these will clear themselves as we proceed. There are a few fundamentals, however, that may be briefly considered. I should first contend that the teaching, as to both subject and method, should begin in terms of the child's normal experience, that it should so develop as to have the greatest pertinence to his physical, economic, and

social relations. This is only another way of saying that it should be natural. I fear that we very often even yet begin at the other end, taking the child out of himself and away from himself in order that we may teach him. In the old-time geography, we even translated him to another sphere before we began the process. We are always in danger of giving him the complete systems of grown-ups rather than the incomplete experience of himself.

It seems to me that these remarks are well illustrated even in some of the nature-study teaching. It is said that this teaching should be accurate, a statement that every good teacher will admit without debate; but accuracy is often interpreted to mean completeness, and then the statement cannot pass unchallenged. To study "the dandelion," "the robin," with emphasis on the particle "the,"

working out the complete structure, may be good laboratory work in botany or zoölogy for advanced pupils, but it is not an elementary educational process. It contributes nothing more to accuracy than does the natural order of leaving untouched all those phases of the subject that are out of the child's reach; while it may take out the life and spirit of the work, and the spiritual quality may be the very part that is most worth the while. Other work may provide the formal "drill;" this should supply the quality and vivacity. Teachers often say to me that their children have done excellent work with these complete methods, and they show me the essays and drawings; but this is no proof that the work is commendable. Children can be made to do many things that they ought not to do and that lie beyond them. We all need to go to school to children.

A little child sat on the sloping strand
Gazing at the flow and the free,
Thrusting its feet into the golden sand,
Playing with the waves and the sea.

I snatched a weed that was tossed on the flood
And unraveled its tangled skeins;
And I traced the course of the fertile blood
That lay deep in its meshèd veins;

I told how the stars are garnered in space,
How the moon on its course is rolled;
How the earth is hung in its ceaseless place
As it whirls in its orbit old.

The little child paused with its busy hands
And gazed for a moment at me;
Then it dropped again to its golden sands
And played with the waves and the sea.

Again, I do not like the old "object-lesson" method, when applied to objects that are a part of the normal environment, because it usually takes the objects out of their setting and thereby destroys their meaning; and, moreover, it develops merely the observational powers. Of

course, it is impossible to study all these objects in their natural places, but there is a way of choosing material and of handling it that, even in the schoolroom, will show its relation and significance. As the emancipation of the schools progresses, more and more of a certain class of work will be done out of doors, or away from the schoolhouse; but for the time being we may as well admit that outdoor work and perfectly natural work must be very small in amount. With animals and plants, I should begin, as far as possible, with function, and not with morphology or analysis. Even in the study of leaves, I should prefer to start with obvious function,—with the place where leaves are found, how they are borne with reference to light, when they fall, or a hundred other simple phenomena; or if I taught them wholly indoors, I should still want to consider them as

living things, not as mere "objects"; in fact, I scarcely know why I should teach leaves at all unless they are part of a plant. Object-lesson teaching by means of natural objects is not nature-study.

I should also avoid the information method. It does a child little good merely to tell him matters of fact. The facts are not central to him and he must retain them by a process of sheer memory; and in order that the teacher may know whether he remembers, the recitation is employed,—re-cite, to tell over again. The educational processes of my younger days were mostly of this order, —the book or the teacher told, I re-told, but the results were always modified by an unpredictable coefficient of evaporation. Good teachers now question the child to discover what he has found out or what he feels, or to suggest what further steps may be taken, and not to

mark him on what he remembers. In other words, the present-day process is to set the pupil independently at work, whether he is young or old, and the information-leaflet or lesson does not do this. Of course it is necessary to give some information, but chiefly for the purpose of putting the pupil in the way of acquiring for himself and to answer his natural inquiries; but information-giving about nature subjects is not nature-study.

We must also distinguish against the verbal method of introducing the new subjects,—the practice, for example, of trying to teach nature-study merely by inserting nature-study words into conventional problems and methods. It is no aid to a knowledge of the dandelion to perform formal mathematical problems with a dandelion phraseology. Using the words of industrial education is of no

significance, for this education has questions and purposes of its own. An inspector asked a pupil what an "average" is. The pupil answered that it is a thing that a hen lays an egg on; and to prove it, he brought the "example" beginning, "If a hen lays three eggs a week on an average."

A man complained to me that his boy had been through the high school and yet did not know a locust blossom even though there was a locust tree in his own yard and in the school yard. I was sorry that the boy did not have this knowledge, but it did not seem to me to be a serious loss; and I asked him why he himself did not teach the boy rather than leave everything to the school. Surely one ought to know the common plants and the birds, though he cannot be expected to know all the plants and birds any more than all the facts in the

books; but he ought to have the power and the desire to know them, and, what is more to the point, he ought to have the educational benefit of knowing such kinds of objects in their life relations.

We should remember that in every waking hour the child is being educated. Every object that appeals to his senses, every circumstance that arouses his emotion or stimulates his imagination, contributes to the educational process. A child's intellectual and moral development is education, whether he goes to school or not. The school should aid in directing all these educational forces, in order that they may produce the most beneficent result. The school has fallen short of its opportunities by confining itself too closely to a certain line of formal and conventional effort. In the nature realm, these ideas as to the influence of the environment are well

expressed in Walt Whitman's poem, beginning

"There was a child went forth every day,
And the first object he look'd upon, that object he became,
And that object became part of him for the day or a certain part of the day,
Or for many years or stretching cycles of years.

"The early lilacs became part of this child,
And grass and white and red morning-glories, and white and red clover, and the song of the phœbe-bird,
And the Third-month lambs and the sow's pink-faint litter, and the mare's foal and the cow's calf,
And the noisy brood of the barnyard or by the mire of the pond-side,
And the fish suspending themselves so curiously below there, and the beautiful curious liquid,
And the water-plants with their graceful flat heads, all became part of him."

It may be said that although I believe in the educational merit of affairs and industries, I nevertheless place the main emphasis on the study of nature. This,

of course, is true. How much of this attitude is the result of personal inclination, I cannot know; but I purposely put the emphasis here because nature is the necessary condition of our lives, and because from a knowledge of nature are to come the main correctives of an overladen civilization; the study of nature will develop original points of view, and help to diversify and enrich and even to augment our leisure.

The school effort may be roughly thrown into two categories,—the content-work and the expression-work. The content-work is the subject-matter. It is the acquisition-work, the result of contact with objects and phases of objects. The child becomes his own investigator; and it is important that he be not asked to investigate beyond his own range, else he becomes an imitator. The content-work is the first and primary work.

The expression-work is the result of the content-work; yet the old schools taught a child to express himself before he had anything to express; and herein lies the explanation of much of the pedagogical inefficiency of the old régime, and also its failure to put the child into real touch with itself and its environment. The means of expression with which we have most to do in elementary schools are speaking, reading, writing, drawing, number. These are not so much subjects to be taught, as results to be secured from the acquiring of experience with subject-matter. The industrial education will put the child into the way of acquiring original knowledge at least as early as it asks him formally to express himself.

I have now tried to express my conviction that a natural and direct kind of education is slowly developing in our

midst, and that this education is founded on the normal human life of the time. It is slowly shaping the common activities into pedagogical form, and making them the means of sound mental discipline; and this is the only way whereby education can be carried to the mass of the people. It will make the people efficient; and it will eventually obliterate all pernicious distinction between the hand-worker and the rest of mankind, and will make for both individual and corporate honesty. It will increase the efficiency of all industrial enterprises. It should set persons at work with their hands. The world is full of those who want to do so-called "mental work,"— clerks, book-keepers, and office servants of all kinds, often driven to do work for the merest pittance; and yet we have difficulty in finding skilled and independent artisans, although the work of the expert artisan

is of the higher grade. The people themselves seem always to have believed in the educational value of the common activities. If the pedagogues do not allow the newer education, the people will force it.

There is no reason why this new industrial education should in any way antagonize or even restrict the studies in language, history, literature and philosophy, for these subjects are as important as others; in fact, they add something to the depth, fullness and repose of life that is much needed in these intense days; and, moreover, these subjects are themselves the final expressions of the very common-day activities that we wish now to introduce, and therefore they will become a natural and integral part of a continuous educational process. But they will not dictate the means and methods at the beginning of the educational process: they are the flower, not the seed.

Nor is it to be feared that this industrial education will lead to "materialism." We seem to be frightened by the mere word materialism, but it is only a bogy-man. Materials are the conditions of existence, and are not only high in themselves but are the bases of what we call the higher aspects of our existence; and the better the knowledge of the material, the bolder and freer should be the apprehension of the immaterial.

Over against this newer industrial education are often set such phrases as "education for manhood," "education for ideals," "education for citizenship;" but this distinction is only academic. It is no doubt true that we have made mistakes — and are still making mistakes — in beginning professional education too early and with too complete exclusion of non-technical subjects; but industrial education, so far as it applies to the

public schools, is not professional education; and industrial and even professional education can be so managed as to train broadly for manhood and for citizenship, and the effect of all education that is worthy the name is to develop the ideals in the subjects that are touched. It is high time that the formal and arbitrary distinction between the old and the new education be obliterated and forgotten.

I have no desire to try to prophesy what the means or the methods of the schools are to be; but it is evident from the tendencies of the time that an intimate and vital touch with the many conditions and affairs of life is to characterize the coming schools.

There's a farm on the hillside,
A mill on the river;
There's a store on the highway,
A mine on the mountain;
There's a shop on the lowland,
A ship on the ocean.

There's a man with his reaper,
A man with his dinner;
There's a man with his shovel,
A man with his measure;
There's a man with his tool-box,
A man with his canvas.

There's a home with its comfort,
A street with its goers;
There's a club with its actors,
A hall with its speakers;
There's a church with its people,
A school with its learners.

These all are God's agents.
Relentless and ceaseless
In workshop and homespun
They weave the Great Fabric.
They are builders of nations,
They are makers of Heaven.

As the race in its progress,
So the child in its nurture
And the flight of the poet
Come up out of Labor.
Constructive, creative,
Will the method of nature
Of life and its content
Make the School of the Future.

IV

Evolution: The Quest of Truth

AT a recent Bible League Convention the hypothesis of evolution was again refuted. Most of us had been led to think that the old contention between the theory of evolution and theology had worn itself out, and that the theory was to be allowed to stand or to fall on its own evidence. We had supposed that the theory is accepted as a working hypothesis by all naturalists and by most publicists. We had been further of the opinion that these adherents, representing all possible points of view and being honest seekers of truth, would quickly withdraw their support in case the hypothesis were found to be untenable — in short, that the burden

of disproving the organic evolution hypothesis no longer rests on the theologians.

The hypothesis of organic evolution is supposed to be an explanation or interpretation of well-observed facts and phenomena. It is well worth our while, therefore, very briefly to enquire what is the nature of the foundations on which these newest refutations rest. If the evolution theory is to collapse, or even if it is to fall into disrepute, our outlook to nature is to undergo a radical change; and the subject becomes of far greater importance than to theology alone.

I have no desire to put myself in the position of appearing to come to the aid of evolution, nor of considering such criticisms as I have mentioned as a menace to that hypothesis. The hypothesis needs no advocates. Nor is it my

purpose to make an attempt to expound the bearings of the evolution philosophy on ethics or religion, except as such discussion bears on our attitude toward nature. The general effect of the rise of the evolution theories is the endeavor to see things as they are, and then to interpret them without fear or bias or prejudice. Evolution stands for the quest of truth as distinguished from adherence to dogma. It affirms that the origin of the forms of life is a natural phenomenon and is governed by law. Evolution has set the face directly toward truth regardless of the consequences; and the outlook to truth in what we call the natural world is the outlook to courage, to the future, and to hope.

Therefore, I use some of the criticisms and refutations merely as texts, and not that I may refute them, nor correct them, nor criticize any person. They are repre-

sentative of nearly all attacks on evolution. Such general attacks are no longer frequent and they by no means represent the attitude of the clergy: in this discussion I have chiefly in mind a certain large class of the laity. Many persons accept the hypothesis of evolution merely as a concession to the times.

Questions as to statements of fact being omitted, objections to the kind of criticisms to which I refer are of two categories. The first, and perhaps the most pertinent observation that such statements suggest, is that the attacks are made by persons who are not themselves familiar either with the subject-matter of the organic evolution hypothesis or with the natural-history point of view, and that their purpose is not so much to discover facts of evolution as to bolster dogmas and traditional beliefs. Now, if the dogmas and beliefs are

true, and are worth the while, they will stand. They will be their own proofs. It is only falsity that needs to be bolstered. Error always refutes itself.

This class of refutations is usually founded on assumption, not on reason or investigation. It is an outlook to "belief," not to nature; and yet evolution is a process of nature. Let me read:

"Following out an observation that in the embryonic state man passes through the different stages of worm, fish, reptile and quadruped, the evolutionist has argued that the human race has accordingly been evolved from the worm, fish, reptile and quadruped. This certainly is a momentous induction from limited data, indeed from almost no data at all.

"If we may speak with perfect plainness, an inexcusable blunder is committed by the evolutionists by reason of over-

looking, or what is worse, by reason of a misinterpretation and false application of, the prophetic element in nature. That is, the Creator is a prophet and his method is to anticipate by type, pattern or prophecy what may be expected in his subsequent creations. For illustration the fins of fishes, the wings and feet of birds and the fore and hind feet of brutes, created before man, are prophetic of the arms and feet of man. So, too, the lower forms of life, the worm, fish and reptile furnish hints of what the higher and later forms are to be."

An appeal to prophecy and belief is not demonstrable, for it does not rest on evidence. Therefore it is not debatable, and is outside the realm of science, and beyond the reach of truth. Finding facts that must be accepted, it attempts to account for them by a wholly gra-

tuitous assumption, and an assumption cannot be disproved. If a man assumes that snow is black, there is no use in trying to convince him that it is white.

My second observation is that such refutations misunderstand and misinterpret what evolution is. For example, they confound evolution and Darwinism; but every writer now should know that Darwinism, or "natural selection," is only one of the means of explaining how evolution may have taken place. Many of our best evolutionists do not believe that Darwinism is an adequate explanation. In fact, Darwin himself did not contend that it is the sole method of evolution: he stated objections to it; and this is most significant, because it is ideal illustration of the fact that the naturalist seeks first for truth, whatever effect the truth may have on his theories.

The hypothesis of organic evolution merely supposes that one form of life may give rise to another form, and that the animals and plants now inhabiting the earth are ascended from earlier kinds. In the main, the hypothesis explains the facts as we see them; and there is no other hypothesis, founded on observation and scientific interpretation, that does account for them. Whether the present form of the hypothesis will stand the final judgment of mankind is of little consequence: it is the most reasonable hypothesis yet propounded; and, what is more to our purpose, it opens the whole subject to investigation. Just how and why this evolution has come about are questions of dispute, but this dispute will in time bring us to a solution. It is probable that no one agency is responsible for the entire evolution; and it is possible

that all explanations, resting on scientific evidence, are responsible in some degree. Every working evolutionist has his own conception of the methods, which only proves that he sees with his own eyes and thinks with his own head, and that his only goal is to find a true explanation. Our opponent cites theories that have been abandoned or modified as proofs of decadence of belief in evolution: but in fact they are the very proofs of its vitality; they are so many stepping-stones in the search for truth. The evolutionist has no age-long dogma. Persons do not seem to realize that nowhere is there so great discussion of theories attempting to explain evolution as amongst evolutionists themselves: but there is little antagonism to the hypothesis that evolution is a method of creation.

These discussions further evidence this

lack of conception of what evolution really is by a general misapprehension of the significance of some of the facts that are cited. I choose the following, from among other statements, merely as an illustration of a method of disproof, or evidence of "collapse."

"And upon enlarging the field of investigation the evolutionist is confronted with still more serious grounds for embarrassment, for there is not only no universal law of improvement, or elaboration, on which his theory largely depends, but on the other hand in scores of instances, there is among things having life a pronounced deterioration of parts and functions. . . .

"When, therefore, the evolutionist in support of his theory says there is in the kingdom of living things a universal law of constant development and improvement, he most certainly is not

telling the truth; and for one to build theories upon such false assumptions is clearly a gross violation of the scientific spirit and method."

What the evolutionist means by progress is not necessarily an increasing complexity and an addition of new parts or attributes in every organism, but rather a progressing or continuing modification. The loss of characters is just as much a process of evolution as the acquiring of characters, for it may just as effectively adapt the organism to its conditions. The loss of legs in the serpents, for example, is one of the clearest proofs of evolution or modification, even though we may think of it as retrogressive; for the rudiments of legs may be found in some cases, and the limb-bearing genealogy is traceable. The general movement of evolution has been toward greater differentiation and complexity, and, in our

human phrase, we sometimes speak of this as "improvement"; but any modification that better relates an organism to its environment is improvement for that organism, whether the modification is the winning of new characters or the loss of characters once gained.

A great impediment to a belief in organic evolution is the careless use of the word "transmutation," which connotes that one species "turns into another species." The transmutation theory is really opposed to the evolution theory, for the latter theory supposes that one species may spring off from another species or rise out of variations from it, the parent species usually retaining its identity. Most of the groups of animals and plants that are definite enough to be readily described as species have probably practically completed their general evolution; they may not be able, even, to

give rise to other marked forms. The world now contains species representing various grades in the process of evolution; but it is to be supposed, since the earth is now relatively stable and densely inhabited, that the progress of the creation is now comparatively small.

The opponents of the evolution philosophy are always asking that the evolutionist show them the process in operation; and at the same time they are very likely to beg the question by affirming that animals and plants are not now changing. This latter position is strongly maintained by the discussions which I have been quoting:

"Beginning with what is called 'the primordial zone' which covers the earliest stage of biological history and coming down to more recent times there will be found, as a matter of fact, multitudes of species that have shown no improvement

since their creation. The algæ or seaweeds, that appeared in the distant Silurian deposit, millions of years ago, were no less perfect than those of the same class found in our modern seas. The oak, birch, hazel and Scotch fir, easily traced back at least to the ice age, have remained in all these thousands of years without the slightest improvement.

"And, too, in the animal kingdom the same discoveries are made; the insects that built the first coral reefs of Florida, in the three hundred centuries of their existence show no improvement."

It must not be supposed that evolutionists believe all animals and plants to be now in process of active evolution. Some forms are essentially matured, some have passed their zenith and are in process of extinction, some are long since lost, others are just now in the stage of marked variation. Some of them may remain for cen-

turies without important change. But I object to the above quotation because of its method or outlook—it is again the method of dogma and not of search for scientific truth. Every instance must be explained on its own evidence, if it is to come within the realm of genuine quest. No one knows whether "the oak, birch, hazel and Scotch fir have remained in all these thousands of years without the slightest improvement," or whether the coral polyp has remained the same during three hundred centuries. Because we can match individual fossils with organisms existing to-day, it does not follow that the two are identical in structure, function, or longevity; and even if it did, this fact would constitute no disproof of evolution. There are positive instances enough to make us believe that evolution takes place.

EVIDENCES OF EVOLUTION

We can see abundant evidences of the continuing process of evolution if we know what to look for and are willing to believe what we see. At one time I planted roots of wild strawberries that were received from Oregon. I gave them a warm and pleasant knoll in the back yard and they grew and thrived. I had photographed the plants before they were set, and had taken botanical specimens from them. I made similar records of the plants after they became established in their new quarters, and at the end of two years I found that the distinguishing ancestral marks had disappeared, and I had a new type of plant. This discovery so delighted me that I told my friend of it, and said I believed that I had really produced a new species. The friend, however, at

once became serious and said that such a remark is heresy and that I should straightway look to my conscience. This staggered me, for I had not thought of it before as a question of ethics or even of philosophy, but only as a question of fact; and I was astonished, as I now thought of it, to find how sinful a simple fact may be.

I returned to the strawberries on the knoll, where they lay so innocently in the sun; and were it not for my friend's suggestion and for the bees fighting in the blossoms, I should have seen no morals in them. It became evident, however, upon reflection, that I had made a grievous fault in my terminology: I had used the word "species"; if I had said "kind," there had been no offense.

It is about this technical word "species" that the battles of evolutionists and theologians have raged for the last

quarter-century and more. The ancients did not know this species-conception, because they knew and cared so little for the external creation that they gave little thought to the kinds of animals and plants. But with the restoration of knowledge, nature came to be more and more intrinsic to man, and persons began to wonder whence and why organisms came. With the attempt to describe or to inventory natural objects, there arose the conception of the "species" as something fundamental, a real entity or originally created thing. There was little attempt or desire to look at the external world broadly and to discover its method and meaning. The mind rested on the objects, and naturally exalted them and their direct progeny into units in the creation. As there was no knowledge of whence and how these units came, they were con-

ceived to be the direct and immediate handiwork of the Creator; and there was therefore no occasion for speculation or inquiry. This human formula of species-units was projected into the Scriptural record, as if that record read, "Let the earth bring forth species of grass," and "species of winged fowl." The idea of the finished and completed species-product became indelibly associated with theological teaching, and was—and, in fact, is—a genuine dogma. If this species-dogma had not become so intimately associated with theological and biological beliefs, the hypothesis of evolution, when it finally came into the world, would have had few combatants.

But are there not species, after all? Surely there are the red maple and the sugar maple, the rose and the cabbage, the horse and the dog. True enough; but we now conceive these to be the

products of evolution, the result of the creation, not the beginning of it. The great Linné's definition is typical of the older mind: "We reckon as many species as there were forms created in the beginning." That is, there are as many trees in a garden as have been placed there. When, however, we are no longer justified in assuming origins, we must base our conclusions on evidence. We shall then count how many trees there are in the garden, and we may find more or fewer than were placed there in the beginning.

But I must not forget my strawberry. A hundred and fifty years ago a strange strawberry made its appearance in the gardens of Europe. Some persons said that it came from South America, and others that it came from North America: but nobody knew its history. Botanists considered it to be a good species, and

it was named Fragaria grandiflora. This Fragaria grandiflora is known to have been the parent of our common garden strawberries; yet the botanies have been discreetly silent as to the nativity of the plant. Now, the truth is that my little strawberry, taken from the woods of Oregon, varied into Fragaria grandiflora in two years. In Oregon it is known to botanists as Fragaria Chiloensis, for it grows in South America as well, and was named from Chilean specimens. If Fragaria grandiflora was a "good species" before my experiment, it was equally good afterward, and, as measured by the actual practice of botanists, a new species had arisen from an old one. When I showed a botanist my results, he said that the very fact that I had been a witness of this transformation is proof that the two plants are not true species. I replied that I was sorry that

I had not closed my eyes when passing the patch, and I also suggested that his species were founded upon ignorance of their origins; but he insisted, although himself an evolutionist, that my having caught the plant in the act was enough to outcast the form which had had the presumption to appear. My ethical friend had shown me the sinfulness of my little fact, and now the scientist had told me that observation is heresy; but the strawberry thrived.

It does not matter to the strawberry or to me whether it gave rise to a new species or not. It was a new form or a new kind; and this simple experiment has enabled me, as I verily believe, to reconstruct the genealogy of the garden strawberry. It is a modification of the Chilean strawberry, introduced into Europe by Captain Frezier about 1712. The unnoticed modification of this straw-

berry, under cultivation, had added one more species to the infinitude of species; but my accidental discovery that the species was actually the result of modification has stricken that species from the lists; and thenceforth the backslider, if mentioned at all in reputable systematic botanies, must be only a variety or form of Fragaria Chiloensis. All this means that species are not, in practice, founded on essential or intrinsic characters, but that the word is applied to any group of animals or plants which is so distinct from other groups that a name may be given it for convenience's sake. The name makes it possible for us to write and talk about the objects, but the name has no other value.

All this shows how personal a thing a species is, how much it is a matter of judgment of the man who makes it. Regel thinks that there are but two

species of grapes in the northern hemisphere, whereas Munson contends that there are twenty-five species in the United States alone. Now, the grapes are the same whether seen by Regel or Munson; but Regel is not Munson. In other words, species are matters of opinion, rather than matters of fact.

The garden strawberry, Fragaria grandiflora, had already developed so far away from its parental species when it first began to be studied, a hundred years ago, that it could not be identified with that parent. It had evolved, and evolved so far that, in the absence of any succinct history, it had been called a distinct species. Many garden plants and most domestic animals are further removed from their parental stems than the strawberry is, but history often supplies the connecting evidence and enables us to identify the offspring with the

ancestry. But when history is silent, we may be able only to guess what the original form may have been, or we may say that the parental species is extinct. It is probable that very few of the original forms of our domestic plants are actually extinct, but the evolution has been so great that we can no longer trace it. It is most significant that of very many of the common and long domesticated plants we do not positively know the wild originals. Of such plants are apple, peach, apricot, almond, orange, lemon, wheat, rye, barley, bean, wine-grape, Indian corn, cotton, flax, sugar-cane, tobacco, sweet potato, banana, pumpkin and squash, and many more. And who knows what was the ancestral form of the ox, sheep, cat, and dog?

I must not be understood as saying that there are no distinct types in nature, or that it is an error to talk about spe-

cies, or that there are always intermediate forms. My argument is that species are not original entities or starting-points, but that the groups which, for convenience, we name as species, are the present-time results of a long process of modification. Those types which are most pronounced and distinct are usually those in which evolution or change is most nearly completed; and those types that are unique are the ones in which has probably begun the slow decline that ends in extinction. The mastodon has perished, and his tribe is disappearing; the giant conifers of other ages are represented in the isolated groves of sequoias (there were giants in those days!); the tulip tree or whitewood, the sassafras, the ginkgo, the scouring-rushes, are now a broken and ragged army slowly but surely marching to their doom. As the numbers become less and less, as the chang-

ing environments and the inexorable grasp of time lop off the aberrant and sportive forms, these patriarchs become reduced to a single racial stem and, like the one remnant of a decaying family, perish at last into oblivion. What was once a chain becomes a series of detached and broken links; and the lost and missing links comprise the proof that there was a chain.

Evolution is not a line: it is a genealogy. It is a tree of numberless branches, each branch forking again and again. The tip of one branch grows faster than its twin and thereby leaves the other behind; so that we now have the examples of many of the stages of development. It is not unlikely that something very like the first forms of life still exist on the earth. The present groups of animals and plants are the tips of the branches in the multifid tree of creation.

It is evident, then, that the missing links lie behind, not between. The genealogy is the missing link; and in many cases it is traceable. There are still many unfortunate persons who think that evolutionists teach that man came directly from the monkey. It is not strange that we sometimes think so. The truth is, no doubt, that the two came off a single stem in ages past, and that they now represent the tips of the branches of a letter Y; but I like to think that the human branch is a little longer than the monkey branch.

There are two general reasons for believing that there must be evolution: The fact that there must be struggle for existence because the earth is not big enough to contain all the possible offspring of the plants and animals living upon it at any given time; and the fact that there have been mighty physical

changes in the earth, changes which, in many cases, are not yet completed. Consequently, organisms must either have changed to meet the new conditions, or have perished. It is impossible to conceive of a perfectly stable and stationary creation. If all offspring were to be precisely like their parents, competition would soon become inconceivably more intense.

The objective evidences of organic evolution may be ranged under the following heads:

The testimony of paleontology, or the torn and broken pages of the book of life preserved to us in the rocks.

The evidence of embryology.

The evidence of comparative anatomy and physiology.

Resemblances of types—or genealogies—which allow objects to be classified.

The evidence of successive increase in

complexity and differentiation, or the growth of "the tree of life."

The great fact of adaptation to environment.

The vagaries of distribution, which are best explained by the evolution hypothesis.

The fact of variation, and the frequency of intergradient forms.

The observed behavior of plants and animals under domestication.

While these various categories of facts and evidence force the conclusion that there has been and is evolution, they are not explanations of its process. The philosophy of the mechanism of evolution has been the subject of the past-century inquiries, headed by Lamarck and Darwin; and in following the details of this speculative natural history one obtains the clearest and most personal conception of the continuing creation.

But there is really little dispute among biologists as to the fact of evolution. The controversy turns upon the means of evolution—the processes by which it has come about. Yet the reader asks to see the process actually going on. I wish he could have seen my strawberries; but, then, he would not have believed his eyes if he had seen. Of course, the lifetime of a man is a short span in which to catch and to observe the movement of creation; but if my doubting reader will come with me into the fields, I will show him the process going forward. He will see it in the many intermediate and local differences in animals and plants. Here a plant grows stronger and there weaker, here erect and there decumbent, here it is small-leaved and there large-leaved, and so on through all grades of unlikenesses and combinations of unlikenesses. There are numerous groups in which

evolution is evident to the close observer. These are the groups which are perplexing to the systematist. They refuse to fall into any scheme of classification, and rebel at the paragraphing into distinct categories (or species) to which, in an age of formalism, the organic creation, like the Scriptures, was subjected. Among common plants, some of these groups are the asters, brambles, goldenrods, cucurbitaceous plants, strawberries, grapes, plums and their kin, and many of the sunflower-like groups.

The reader may be willing to accept all my remarks respecting the fact of variation; but he asks what proofs I bring that these varieties actually may be the beginnings of new species. In the first place, I must call attention to the fact that there is no difference between species and variety except one of degree. It is therefore a proper infer-

ence that the greater has come from the less. In the second place, we have the evidence of intergradient forms from very wide differences to very small ones.

Some of the best illustrations of the separating of two or more species from a parent stock are afforded by so-called geographical species. Let us turn to the wild grapes. A certain species extends from the humid climate of the Atlantic seaboard to the arid country of Texas. It was first made known from eastern specimens and was named Vitis æstivalis. Later on, Texan specimens were described as Vitis Linsecomii. In these extremes the two grapes are perfectly well distinguished and have every merit to be ranked as distinct species. In the intermediate country, however, they merge and are indistinguishable. Therefore, for purposes of description and classifica-

tion, one must be regarded as a variety of the other. If, however, a mountain chain or an ocean separated the two geographical regions, and thereby blotted out the intermediates, there could be no hesitation in awarding specific rank to each. This case is typical of the progress of creation: each geographical area has plants and animals peculiar to it, and in proportion as an area is disjoined and unlike others are its living forms peculiar and distinct. Many American plants are very like those of Europe, but the Atlantic Ocean so completely eliminates the possibility of intermediates that botanists regard the plants as geographical species. Thus we have another illustration of the fact that species may be defined not alone by intrinsic characters, but by personalities, and often in terms of mountains, plains, and oceans.

It may interest you to have Darwin's

view, as expressed in the concluding paragraph of his "Origin of Species": "It is interesting to contemplate a tangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent upon each other in so complex a manner, have all been produced by laws acting around us. These laws, taken in the largest sense, being Growth and Reproduction; Inheritance, which is almost implied by reproduction; Variability from the indirect and direct action of the conditions of life, and from use and disuse: a Ratio of Increase so high as to lead to a Struggle for Life, and as a consequence to Natural Selection, entailing Divergence of Character and

the Extinction of less-improved forms. Thus, from the war of nature, from famine and death, the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows. There is grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning, endless forms most beautiful and most wonderful have been, and are being evolved."

SOME CONSEQUENCES OF THE EVOLUTION TEACHING

I have now indicated in a most sketchy way a few of the evidences of evolution. I have chosen to speak of only the most familiar cases, because they are seldom

mentioned in contemporary writings, and because they seem to me to be the very best proofs of evolution. We have been looking so far into the past, have searched so diligently for great facts, have so urgently desired to see the missing links, and have so confounded ourselves with philosophy, that we have forgotten to go out and see the creation going on about us.

In the natural history domain we are rapidly emancipating ourselves from the dogma of "species." This is well attested by the recent theories of De Vries; for the very essence of his contention is that differences between organisms must be measured by their qualities, not by their names. In the popular realm it is attested by the great attention that we are giving to individual animals as personalities rather than to species and groups. We are asked to consider the

habits and history of one individual crow, for example, and we may name him Silver Spot rather than Corvus Americanus. The Burroughs-Long controversy, aside from its incidents and its disputes as to matters of fact, brings up the deeper question as to how far particular animals have strong individual traits that are not common to the species as a whole. In fiction and narrative, this question expresses itself in the making of an animal the "hero" of the story, as in "Black Beauty" and "The Call of the Wild." Strangely enough, all this is the natural way of knowing the out-of-doors. It is the way that the boy and the hunter know it. The boy knows what the squirrel does day by day,—where it lives, when it goes and comes, what it eats, what it says. He knows the fields and the woods and the fishing-hole, without knowing that he knows them. If we

could have the intimate unconscious boy kind of knowledge put into books, it would almost make a new natural history. It would give us the life-story of the animal or the plant the whole year round. Such an author would give us the animal squirrel, not the species squirrel. This kind of knowledge is not yet in books to any great extent. Consult your authorities, and see how little explicit knowledge you find in them. I have long since ceased to consult the books that I have written. One reason why the nature-studies are so difficult to establish is because there are almost no books to serve as guides to the intimate and particular life histories. We need a new type of monographs, written directly from the field, without reference to the museums or to the kind of information that we have read about. These will contain the least possible contamination

of the author and the greatest possible content of crow or frog.

The evolution point of view has modified teaching and the school. It has enforced the importance of the natural order, and of original and personal experience. With the great multiplication of human interests, the school has become overburdened and complex. We shall return to simplicity; and the child will begin with his environment and himself, rather than with the universe and some one else. This point of view is working itself into the methods of our schools; but we have not yet learned what may be omitted from courses of study.

Evolution has modified or even reversed our attitude toward history, philosophy, and institutionalism. We now consider all questions from the point of view of their origin, develop-

ment, and destiny. All activities are becoming scientific. The inroads of evolution are most marked in those fields that are most dominated by dogma and tradition; and this is why its conflict with theology has been so long-continued and so intense. But it is emancipating religion, as it has emancipated all else. Even theology must be scientific: it is the theory of religion, and religion, if it is vital, must grow and change in its expression as new conditions arise. Least of all, can religion afford to seem to be afraid of the truth, whether in the natural science sphere or any other sphere. Dogmas, beliefs, and theories are only temporary and partial means of expressing our conceptions; as our conceptions enlarge, the dogmas expand or break. Truth only is divine: dogmas and beliefs are human.

Evolution is the point of view of otherism and altruism. It was the old idea that the earth is the center of the universe: this geocentric doctrine Copernicus disproved. It was the old idea that all things exist merely to please man: this hominocentric doctrine Darwin disproved. Every animal and plant lives for itself and apparently as completely as if man had never existed. The recognition of these facts is one of the first steps toward a real regard for the rights of others, and consequently toward the elimination of selfishness and exclusiveness. Yet we still seem to think that every animal and plant was created for some purpose other than for itself, and we are always asking what every organism is "for." When speaking once to a popular audience, a person interrupted me with the question: "Can you tell us what a snake is good for?" I

replied that I surely knew the answer to one question: a snake is good to be a snake.

Nothing is more apparent than that the evolution type of mind is itself an evolution. It has evolved slowly. The evolution conception was certainly present with the Greeks. In an indefinite way, it began to modify men's opinions long before it finally expressed itself concretely in the works of the great modern naturalists. Its great teachers have been in advance of their time. The opinions held by men are so many epochs in the enlarging capacities of the mind. These opinions show as clear a progress of evolution as do the changing structures of bones or the modifications of functions. The opposition to evolution is itself a stage in the process of evolution.

Of course we have few definite proofs

of evolution, but we have set out with the determination to discover the origin and meaning of the world in which we live; and evidence is rapidly accumulating. As yet, we have only a few fragments here and there upon which to construct any general theory of cosmogony, and, therefore, of life and destiny. Yet there is every reason to believe in the consecutive uniformity of action of great primal, underlying agencies. The fragmentary phenomena which we are able to observe are parts in some great system. The philosopher should therefore be able, from a study of even fragmentary knowledge, to construct a retrospect and to make a prophecy. Science gives us prevision. If I conclude that the sun will rise to-morrow because it rose to-day and yesterday, I may then fairly assume that the evolution plan of creation will be

as true to-morrow as it is to-day; and if it is the plan of creation to-day and yesterday, I assume that it was the plan in the beginning. I am willing to believe that all the organic world has come from one starting point, and that every living thing is the result of the ever-continuous modification of the life-stem.

I am willing to believe more than this; to believe, in short, that the visible universe has taken its present form as the result of physical forces of which, in their lesser expressions, we may have common knowledge. Worlds, like men, grow old and die. The marks of senility may even now be apparent in this earth of ours, which seems to us so young. With the receding and absorption of the waters, great areas have become deserts—perhaps the beginning of that great decline which must end in death.

The moon seems to have run its span of life, and there is evidence that Mars is now far advanced upon that arid course which leads its inhabitants onward to extinction. It is conceivable that the planets will fall again into a central mass and thence again shoot forth to begin a new creation. We do not know whether this cosmos that we see is the first or the millionth!

Oh Mars! Sister in the stellar space—
Thy course far run upon the great abyss—
Send us thy message!
What hast thou learned in thy great life,
What hopes are thine, what doubts removed,
What dost thou see beyond the veil,
What meaneth life and death?

AN EVOLUTIONIST'S OUTLOOK

If one holds such views as these, you want to know his attitude toward God and religion. I do not assume to contradict any man's theory of life, and do not

desire to impress my own opinions on any mind. Neither have I any suggestions to make as to conduct; every man must work out his own life: and as he thinketh, so is he.

Now, as I think of it, there are two considerations that lie at the bottom of this whole matter. In the first place, even if my strawberry did originate another species, truth and love and mercy have not changed. In the second place, I have no reason to deny God to-day because I misunderstood him yesterday.

The means and methods of creation are not a part of revelation. The Scriptures have quite another theme. Only the general course and sequence of the creation are outlined; and it is marvelous that the most advanced teaching of evolution should so fully confirm the sequence of Genesis. I find nothing in Scripture to make me disbe-

lieve evolution. Man has interjected his own conceptions of the means of creation into the Mosaic symbolism, and has thrown them into his creed; and if that creed must now be overthrown, the fault is man's, not God's.

But where is God, in all this great and evolving scheme of creation? I answer that he is where he always was. Nothing that man can do can make the creation any the less true or untrue; and what a man believes he saw in a strawberry plant need not lessen his faith in a creator any more than it shakes his faith in a creation. Strictly speaking, evolution does not attempt to explain creation, but only the progress of the creation. Whatever its form, it begins where Genesis does—"In the beginning, God."

It will afford me much satisfaction to say that some of the attempts of the

theological apologist to find a place for God in the evolution scheme are the merest quibbles,—I have in mind a debate in which I once engaged. He turns the leaves of Darwin or Huxley and as often as he finds the word "plan" postulates a planner, and if he finds "design" affirms a designer. Now the fact is that these words are borrowed from common language to express ideas for which no plain technical words exist. The naturalist uses the word "plan" to designate a type of structure, or a marked tendency in any group, and "design" to indicate the idea of a proximate or immediate interference of the creator. Neither word has reference to purposiveness. It would be as true to say that when a naturalist uses the word "type," he thereby postulates a type-setter.

There is another method of search for

God in the creation, which we should consider in passing. Being no longer able to see the special interjection of a divine hand in the making of species, the seeker desires to find him in the variations from which species arise. This supposes that variation is definite and designed — that plants and animals do not vary indiscriminately and in all directions, but chiefly in a few directions, or even in only one, and that this variation is along the line of the evolution of the type; and that it is the special work of the hand of the Creator. Of course there is no satisfaction in any such makeshift as this, for there is no essential difference between what we call species and what we call varieties, and if we assume special creation in one we may as well assume it in the other.

Driven from this position, these persons next fall back upon the origin of

life—for life certainly must have been specially created. It is true that we do not know whence and how it came. Now, to me, it does not matter whether life was specially created or whether it was first the result of chemical recompounding, or of other so-called "natural" forces. If it is the result of natural forces, then I want to know it, and I should dearly like to see it making; and I should thank God if he allowed me so close a view of his methods.

We are not to search for God here and there, as if we were afraid he would elude us, but we are to see him everywhere; and we must be willing and ready to see nature as it is. Truth is the standard, and no creed or dogma should close our eyes to the facts and the beauty of the external world. Nature must ever be our recourse; one may well exclaim with Wordsworth:

"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 coming from the sea,
Or hear old Triton blow his wreathèd horn."

A woman who knew my evolution beliefs once asked me where heaven is. There seemed to her to be no place left for it in the cosmos of the evolutionist. This is a type of difficulty that perplexes many persons. They dwell upon the physical symbolisms of faith and creed, as if the things of the spirit must be measured by time and space and materials. I could only answer that I never expect to be able to discover heaven with a telescope. Perhaps heaven is much nearer than we think. Do we expect to locate a scene of which the very plan and elements are so far beyond human cognizance that they

cannot be revealed to us? One has but to reflect upon the varied pictures which we have of heaven to discern that Scripture and experience reveal only the fact of heaven, not the vision of it. To the Indian, it is the happy hunting ground; to the weary, a home of rest; for the wandering disciples, a house of many mansions; to those living under the Roman influence, an eternal city; to the inhabitants of desert-bordered Palestine, a scene where waters fail not; to John, banished on Patmos, a place where there is no more sea. If we have only symbols of the other world, how futile to ask where Elysium is! Enough for us to know that it is, not where!

To me, the entire evolution scheme is a design, and the fact that we have only now been able to apprehend this scheme is all the more proof that it is divine. But creation cannot be a true

design or scheme if special interference in particulars is necessary to carry it forward. Likewise, a scheme that applies to some groups and not to all, or in which special creations are now and then invoked, is disjunctive and discursive, unable to support itself, and therefore unworthy a divine hand. A powerful reason for ascribing the entire creation to an almighty hand is the very fact that it has within itself the power of unfolding and developing throughout space and time — the fact, indeed, that it is an evolution.

Considered as a methodological question, evolution is either true or not true. It cannot be half true and be evolution. I see design in it because it postulates uniformity of force and action. The idea of special creation postulates change of purpose or at least incompleteness of design. It infers capriciousness. Much

of the creation is meaningless unless we conceive all its parts to have organic connection. The idea of a creator interfering in his creation, and constantly reinforcing and mending it, is typically human, suggested by the workshop, and is unworthy of a creator. The creator is not a mechanic. If the cosmos is a design, it must follow, of course, that there is design in its parts; but the design in the parts is the unfolding of the law of design, not special interference in particulars.

To the individual, the evolution conception enforces the importance and the power of the person as distinguished from the mass. It stands for the individual and voluntary life. Each organism has its own work to do, its own struggles to overcome, its own perplexities to solve; and it can be itself only when it is master for itself. Each organism is a part in a

fabric, but each helps in its own way in the general movement toward destiny; and it cannot escape the burden of its own sphere unless it die. When intelligence has appeared, the organism rises above its circumstances in a measure, and it may have a choice of alternatives; but it cannot choose to cease to play its part in the progress of life.

The evolution philosophies have changed our point of view not only toward what we call nature, but toward all problems of life and destiny. They demand that we be willing to free ourselves from every bondage of doctrine and dogma, from traditions and superstitions, from "authority" and prejudgments, and that we regard every subject the human mind can grasp as proper for unhindered inquiry and discussion. The evolution speculations are emancipating us. This emancipation is not yet com-

plete; for few of us are yet willing to believe whatever may be true, or to commit ourselves unreservedly to a quest of the truth as evidence and reason may direct us. This new outlook opens the universe for observation and for study; it is the only hope of the race: for the truth shall make you free.

Man is a part of the evolution record; he is partaker in the process, not a passive looker-on; He is democrat amongst democrats, not autocrat created of some different and cleaner stuff. What supremacy he has is what he wins. The pride of effort and accomplishment is better than the pride of origin. Effort works out of us the selfishness and arrogance. There was need of the rise of some hypothesis of altruism and tolerance, for nothing could have been more self-centered than the old creeds that elected ourselves to be

saved and others to be doomed. Salvation is not the highest goal of religion; gradually the emphasis is being transferred from salvation to service.

It is said that evolution gives us no new faith for that which it destroys. Evolution is not a faith; it only sets us free. It destroys no faith, except as doctrines are shattered if they do not match with experience or seem reasonable in the light of our expanding knowledge. It tends to strip the practice of religion of its non-essentials. The organic evolution hypothesis is but one of the results or expressions of the study of science, and probably it is not the boldest expression that the world will see. Natural science stands indisputably for truth in its own realm, and, therefore, makes for truth in all realms. It stands for absolute honesty and frankness, and for the accumulating of fact and evidence. It stands for the

fair, open, and convincible mind. Its whole tendency is toward higher ideals, and it is this idealism that is thrusting old forms aside in order that it may find the precious crystal of Truth. Just now it seems as if we were left somewhat adrift in our faiths; but this is because we have not yet been able to readjust and recodify our religious outlook. Religious experience is undergoing a new birth, but we shall not cut loose from the past. We shall keep all that is divine. We shall formulate a new theology that to us will be more helpful than the old.

It is asserted that the modern evolution studies tend to decrease churchgoing. I do not think this is because these studies antagonize religion; but the man who comes fresh from a study of objects and phenomena often finds the service and the sermon so contrary

to what he believes is the course of nature that they fail to hold his interest. They may seem to him narrow and inadequate and verbal, not large and vital and relevant; and therefore the church may depress rather than stimulate him. On the other hand, the layman, immersed in his investigations or affairs and expending his energies in them, may be little aware of the progressive attitude of the church as a whole, of its full acceptance of the results of scientific research, its growing spirit of freedom from the non-essentials on which men differ, the new leadership that it has acquired, and the great share that it is contributing to the constructive movements of the time. The tendency is for men to determine wherein they agree rather than wherein they differ, and to coöperate in a large way for the public good.

We are less and less interested in

theories of religion as guides to action. Every heresy trial seems to emphasize the importance that is attached to "beliefs" rather than to essentials. The world cares less for what a man passively "believes" than for what he is. It needs fine, bold, constructive, spiritual work, something that appeals to the forceful, creative energies of able, active men. This, in fact, is the very tendency in spiritual work to-day; and it is for this reason that we are to expect a strong revival of religious feeling. The world never needed great spiritual leaders more than now,—perhaps never so much as now, when old formulas are falling apart, when industrialism is rising with enormous rapidity, when wealth is increasing and is placed at the disposal of altruistic enterprises, and when we begin to realize the brotherhood of man. Perhaps the day of much preaching is passing; but

the day of the pastor and the minister is coming.

If we are to have naturalness in teaching and literature and science, surely we should have it in religion. I think that we have over-emphasized the supernatural element. Religion is as natural and as normal as other human activities and aspirations. It is itself an evolution. It is to be expected that our conception of God will enlarge as our horizon enlarges. This conception is of course anthropomorphic,—founded on human attributes. Evolution implies that God is not outside nature, but in nature, that he is an indwelling spirit in nature as truly as in man. He is immanent, not absent. Just how we shall formulate the evolution-idea into religion, only the future can tell; but I see no reason for apprehension or doubt. It is evident that the evolution teaching is helping to

place religion on a rational and scientific basis. I think that every minister should be a naturalist,—using the word in its large and etymological sense.

The evolution-conception of the universe, therefore, bids us come and stand on a high place. It magnifies individual effort, kindles the inner light of conscience in distinction from authority, lessens belief in mere wonders, stimulates the reason, and emancipates the man. It asks us to lay aside prejudice and small dogmatisms. It impels us to a new and great reverence for the Power which has set in motion that stupendous enterprise which unfolds itself without a break or change of purpose, setting the stars in their courses and molding the strawberry into its new environments, losing no detail in its mighty swing and running on to destiny in ages hence of which we cannot yet perceive the meaning. It

bids us put ourselves in line with the movement of the ages, to throw aside all mental reservations and oppositions to truth, and to do our little, with sympathy and inspiration, to forward the creation.

All beliefs, all doctrines, all creeds are mine. I want only the truth and the privilege to live in the great good world. Truth, and the quest of truth, are always safe. It is not my part to be anxious about destiny or about the universe. If my tiny opinions are outgrown, I shall wait, in patience and in hope. There is grateful release in letting the universe take care of itself. The universe is in better hands than mine. In these matters, I will substitute trust for faith. If I cannot remove the dandelions from the lawn, then I will love the dandelions. Where once were weeds are now golden coins, bees reveling in color, and

the spring sunshine kissing the blossoms with lips of dew. It is so sweet and restful now that I abide in peace.

> Passengers on the cosmic sea
> We know not whence nor whither:
> 'Tis happiness enough to be
> In tune with wind and weather.

In conclusion, it seems to me that we are to pass the Age of Doubt. We are caring less for "belief" and therefore there is less reason for "doubt,"—for "doubt" is the complement of "belief" and originates because we cannot believe the belief. The verities of religion lie deeper than beliefs or dogmas or formulas. We shall cease to bolster and reinforce faith by artificial and arbitrary means. Freedom and simplicity are requisite to great religious growth. Faith will be direct and free, as natural as the trust of the child, as native to

us as the sunshine and the air. We are coming to a religion of joy and activity, full of high spirituality, of great trust in nature, of hope in man, and of direct dependence on the Almighty.

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