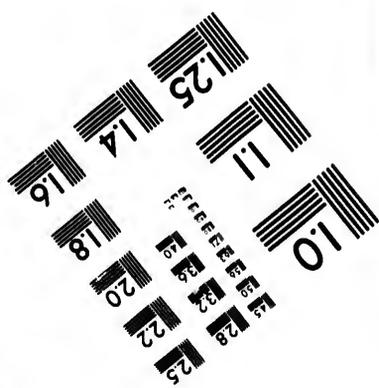
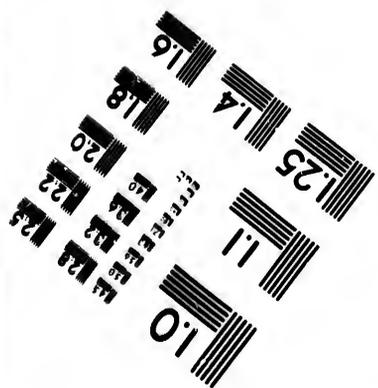
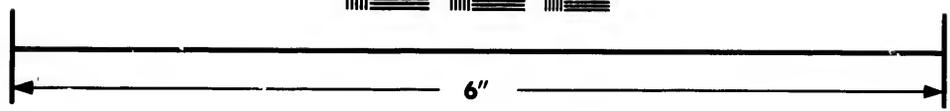
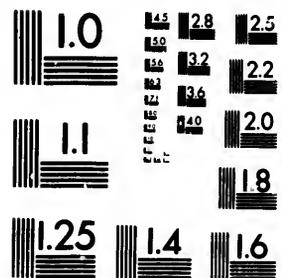


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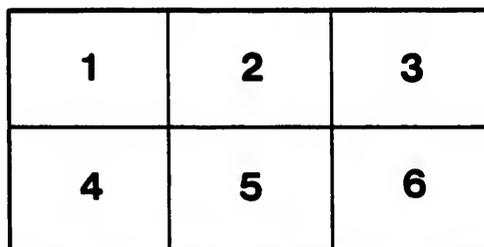
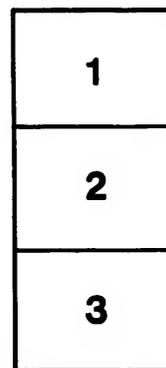
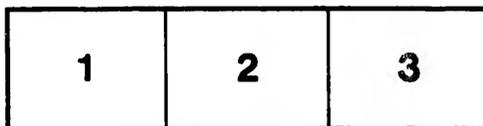
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**ANNUAL ADDRESS**

DELIVERED

**BEFORE THE MEMBERS**

OF THE

**FREDERICTON ATHENÆUM,**

FEBRUARY 23, 1857,

BY

**THE REV. JOHN M. BROOKE, D. D.**

**PRESIDENT.**

---

PRINTED BY ORDER OF THE SOCIETY.

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**FREDERICTON :**

PRINTED AT THE ROYAL GAZETTE OFFICE.

1857.

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## ANNUAL ADDRESS.

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GENTLEMEN :

I congratulate you on the return of another anniversary of our Society, and, still more, on the gratifying fact, that the close of the first decade of its existence finds it still fresh and vigorous. Ten years, indeed, are not to be considered a very lengthened period in the history of a Literary Institution ; yet still it has been sufficient, in our case, to solve, in the most satisfactory manner, the question, whether or not the establishment and continuance of such a Society in this City, was possible. This is now settled beyond all dispute. The Athenæum has passed through that period which was most likely to try its strength : it has come out of it unscathed, shewing that its constitution is sound, and giving reason to cherish the hope that a long career of activity and usefulness is before it.

We have not been without those changes to which all human things are liable. Several of our members, whom we have often met at this table, have withdrawn, without any ostensible reason ; some have been called away to other lands ; and some, alas ! have been removed by death. I am thankful, that during the year that has passed, we have not been called upon to mourn the departure of any who have taken a part with us in the business of the Society, arising from any other cause than such a change in the place of their abode, as rendered their attendance upon our meetings impossible. In other respects, I am exceedingly glad to find the circle unbroken ; and that the same friendly faces that greeted me when, twelve months ago, I took my place in this chair, are still before me, now when I am about to withdraw from it.

My predecessors in office have been gentlemen of such high attainments, and their closing Addresses have been received with such well merited applause, that, I assure you, I use the language of no affected humility when I express my fears, that you will miss, in this Address of mine, many of those attractions of style and manner, which, on former occasions, have

communicated such a charm to the annual *résumé* of the subjects brought before the Society, to draw up which is one of the duties that devolves upon your President. Permit me, however, to say that I bring to the work a hearty good will; and if, at the close of this Address, you feel disposed to say that I have not done all that you expected, you will, at least, give me credit when I say, "I have done what I could."

Before I proceed to what is more peculiarly the business of this evening, allow me to seize on the present opportunity of thanking you, as I do most cordially, for the honor you have conferred upon me, in appointing me your President, and that too for the second time. I regard it as a very gratifying proof of the good will of those with whom I have been now so long associated, and to meet with whom, at this table, it has often given me so much pleasure. The duties which have devolved upon me, while holding the office to which your kindness called me, have been very light and pleasing. It is easy to rule when subjects are all obedient and orderly; and the courtesy and kindness of feeling, which have characterized all our proceedings, have been so invariable, that the awful powers with which your President is invested, having had no room for exercise, have lain completely dormant. I cannot express a better wish for my successors in office, than that they may find their labours as light, and their duties as pleasant as mine have been.

I am gratified to observe what I think an improvement during the past year, in point of the attendance of members. By the Constitution of our Society, the number necessary to form a quorum for the transaction of business was fixed, as I think judiciously, somewhat high. It was felt that it would be unjust to ask a member who had devoted no small portion of time and labour to the preparation of a paper, to read it in the presence of but a few individuals. On some occasions, however, in former years, in consequence of the number requisite to form a quorum demanding so large a portion of the members, considerable inconvenience has been experienced; inasmuch as so many of us, after having struggled through the storm, and

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reached the place of meeting, have sometimes found that others, not so eager in "the pursuit of knowledge under difficulties," had preferred the comfort of their own firesides to what I acknowledge to be, not unfrequently, a rather fatiguing walk in a wintry night: and so it happened that, for want of, perhaps, a single individual to constitute a meeting, all the rest, who had endured the toil of coming up, were obliged to return home, unrefreshed by that mental repast, which, otherwise, they might have enjoyed. I am pleased to think, however, that, during the past year, we have never, in a single instance, when a meeting was called, come short of the number necessary for the transaction of business. I trust this is an indication of a deeper interest being felt in our Society by the members generally; and of a higher appreciation of the benefits to be derived from those literary and scientific papers that are here brought under our notice.

The subjects that have engaged our attention, during the past year, if not so varied, have certainly been not less important than on any former occasion. A most appropriate commencement was made by Dr. Robb in the month of March, by a paper on the Progress of Agriculture; and the same was continued, at our subsequent meeting, in April. A portion, if not the whole, of this most important Dissertation, (as it may well be called,) to which we had the privilege of first listening in this place, has, in a printed form, been, for a considerable time, in the hands of all the members of this Society, as well as of many others throughout the Province; and it has been appreciated by all who have seen it, as a very valuable contribution to the practical farmer; and, being prepared with a view to the circumstances of this country, it is especially useful to the Agriculturist of New Brunswick.

In this Essay, (for I shall consider the two parts as constituting one whole,) our able Secretary, following his usual practice of going to the foundation of every thing that he examines, has literally carried out the French maxim, which bids us "commencer au commencement." In pursuance of this plan, Dr. Robb gave us a rapid sketch of the primitive state of

man, his progress in civilization, the origin and various tenures of property, and concluded with pointing out the surprising advances made in Agriculture, from the first rude attempts to raise a few roots and vegetables, down to the present time, when it has been elevated to the dignity of a science, employs in its service so many of our fellow men, and produces food for the daily increasing millions who inhabit our earth.

It would greatly exceed the limits of this Address, were I to follow the learned Doctor through all the parts of his very interesting enquiry: I must be contented, therefore, with briefly touching on some of the most important points, only regretting that I cannot bring them more fully before you.

Much has been said and sung respecting what was the original condition of man, and no very satisfactory conclusion has been arrived at. I believe that the difficulty of the enquiry has been greatly increased by the efforts that have been put forth to discover some *one condition* from which all tribes and kindreds at first commenced their career. Now, no condition common to all can ever possibly be found. The early states of society, like every other, would, no doubt, be greatly modified by the circumstances of soil, climate and situation. Still, there will, in most cases, be a general sameness; and, so far as observation goes, I am disposed to think that we have ground to conclude that mankind, in their least advanced condition, depended for their subsistence on the chase. Poets have revelled in depicting to us the roving life of the Huntsman, whose home is the wilderness, whose shelter is the forest boughs, and whose food is the beast of the desert, the captive of his bow and his spear. But though the Huntsman, armed with the weapons of sylvan warfare, may be a more picturesque being than the Farmer in his quiet and settled habitation, "driving his team a-field," or bearing his hay-fork over his shoulder; yet, I think, no one can doubt which is the more useful in his generation, or the more elevated in the social scale. Enthusiasts may declaim as they choose on those glorious old times,

"When wild in woods the noble savage ran:"

Plain truth compels us to acknowledge that this, so called,

"noble savage" was any thing but a pleasing specimen of humanity, and that the condition of society in which he flourished was very far from being a happy one.

Besides, in the very nature of things, no country could ever support a large population, so long as its inhabitants depended for their subsistence, solely on their success in hunting. For, as a country becomes more thickly peopled, the beasts of the chase become necessarily diminished in number, if they do not altogether disappear. And this is just equivalent to saying that, as the demand increases, the supply will be found to diminish.

As this state of things cannot go on long, some change is necessary; and the next resource, in most cases, will be the Pastoral Life. To this, the transition from the state of the Huntsman is natural and easy.

So long as men depended on the casual supplies of food obtained by the chase, times would occur when they would be forced to endure the utmost extremities of hunger. When this happened, it would suggest to them the expediency of collecting together, and confining within certain limits, such animals as were at once in most request for food, and most easily subjected to the power of man. This being accomplished, the supply of food would no longer be so precarious. The animals that furnished it could always be found, and that with comparatively little toil. A much larger population could be thus sustained; men could live more closely united; and considerable advances might be made in those arts that are so conducive to the comfort of human beings.

There is something, to my mind, exceedingly fascinating in the Pastoral Life. It seems a happy medium between the savage state, and the evils that are incident to a high state of refinement. I cannot tell whether or not the pictures that have been drawn by the old Poets have produced this impression on me. To some extent, it is probable, they may. There is, no doubt, much in them that is very attractive. They are associated with all our conceptions of peace, and purity, and rural happiness. A life spent amid the most lovely scenos

of nature, on the green hill side, or in the sheltered valley,

"Where peaceful rivers, soft and slow,  
Amid the verdant landscape flow,"

seems so enticing to one who has been "long in populous city pent," that it is no wonder he should desire to escape from the din, and the dust, and the bustle of the crowded thoroughfare, and seek for refreshment and repose among the invigorating breezes and peaceful solitudes of the country.

But while there is no doubt, that the Greek and Latin Poets have helped to throw a charm over the Pastoral Life, still, if I am not mistaken, my own mind has been more affected by the beautiful pictures of that state contained in the Sacred volume. I could wish to have lived with Abraham in his tent, to have worshipped with him at the Altar which he built on the Plains of Hebron, or roamed with him who was "the friend of God," and listened to his prophetic words, in the fertile and well watered valley of the Jordan.

But however delightful in contemplation these scenes of rural felicity and Pastoral innocence may be, they are only pictures of Society in a state of transition. No country ever rose to a high state of civilization, while the Pastoral Life continued to be the universal condition of its inhabitants. Flocks and herds would furnish a more abundant, as well as a much less precarious, supply of food than the beasts of the chase; but still, even they would be far from meeting the increasing wants of a rapidly multiplying population. I suppose that the increase of food furnished by domesticated animals, over those in a wild state, may not be estimated too high, when I call it a thousand to one. But what is to be done when the demand is increased not one thousand, but ten thousand fold? Nature has set limits to the productiveness of animals, and these are soon reached; and it is obvious they cannot long keep pace with the rate at which the human race are multiplied, especially when a constantly increasing number of them are required for food. The only remaining resource, then, is in the cultivation of the soil: and thus we are introduced to the third and most advanced stage of society—the Agricultural state. The two former that we reviewed are but transitory; this must continue as long as the world endures.

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We are not to understand that there was an immediate and entire abandonment of the Huntsman's state for the Pastoral, nor of the Pastoral for the Agricultural. In both cases the transition would be partial, as well as gradual. As in the Pastoral state, there would still be some Huntsmen, so in the Agricultural state, there are still some who follow the Pastoral life; and all three may, almost in every country, be found existing simultaneously.

Agriculture would probably originate in this wise: Certain plants and trees, being found to yield a considerable supply of food both for man and beast, efforts would be made to propagate them more abundantly than they could be produced by the spontaneous effort of nature. These all grew in a wild state, before they were cultivated by the hand of man, just as all animals existed in a wild state, before they were domesticated. Though the cereal plants are now, by culture, naturalized in every quarter of the globe, yet there was originally some particular part where each of them was indigenous. These are the great resources of the Agriculturist; and, by means of these, he is enabled to increase the supply of food, in a ratio that is far beyond my calculation.

It is probable, that with Agriculture originated the claim of certain persons to a right of property in the soil. The Indian Huntsman, indeed, has his hunting grounds, and he resents the intrusion upon them of another tribe. But his idea of property is far from being clearly defined. In like manner, the man who had collected a number of animals in a certain territory, and taken some measures to prevent them from wandering, might consider that he had established some kind of right to the piece of land he had thus appropriated. The nature of that right, however, he could not very well explain, and there might be no law to protect him in the enjoyment of it. But it is certain, that no great advances would be made in Agriculture, till the right of property was established on a secure basis, and protected by distinct legal enactments. No man would bestow much labour in cultivating and sowing a field, unless he had some assurance that his neighbour would not step in and

claim it as his, before he had gathered in his harvest. There is no original and inherent right enjoyed by one more than another, to any particular portion of the soil; and hence, perhaps, that celebrated apophthegm, which, some years ago, was the popular cry of a certain party in France, "*La propriété c'est vol.*" But though the right of property is not inherent, like some others enjoyed by man, it is easy to see how, in various ways, it may be acquired. It probably arose at first, as, in some cases, it arises still, from undisturbed possession for a time; and was strengthened and established by labour expended, and improvements wrought. As the child, who, by much exertion of his feeble arms, has dragged a seat to a snug corner near the fire, thinks he is entitled to claim that seat as his own, because of the labour he has put forth to improve its position; and his claim being for some time allowed, is at length, by tacit consent, left in undisturbed possession of it; so the man, who has prepared a field for cultivation, removed the rocks that impeded the operations of the husbandman, smoothed its inequalities, hedged it in, and cut a channel for its superfluous waters, would be acknowledged, by all around him, to have a better right to that field than any other person; and, after he has possessed it for a length of time, to deprive him of it would be felt to be an obvious act of injustice. As Society advanced, and a regular government was established, land hitherto unappropriated might be conveyed and held by various tenures, and the right transferred from one to another, by the well understood process of buying and selling.

I consider the origin of property a very curious speculation. I am neither lawyer nor political economist enough to follow it out in all its details. Permit me to express a hope, that some member of this Society, who has made it the subject of his study, will take it up and fully investigate the philosophy of it in all its bearings. Some of our friends of the long robe, I trust, will act upon this suggestion; and I hope I shall not be thought to have overstepped the proper limits of my duty in throwing out this hint for their consideration.

I have occupied so much time with the preliminary parts of

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Dr. Robb's Dissertation, that I have left myself but brief space for what is the essential part of it. I must not, however, dismiss it thus abruptly; and I have, therefore, to entreat your patience for a few minutes more, while I shortly review the remarks of the learned Doctor on "Agriculture considered as an Art."

Agriculture, or the best method of rendering land productive, is unquestionably of the highest importance to the happiness, and even the very existence, of the human race. You have heard it said, that "the man who makes two blades of grass or two stalks of corn to grow where only one grew before, is a public benefactor." And the saying is well founded. He adds to the comfort and diminishes the sufferings of millions of his fellow men.

There is no doubt that the first attempts to cultivate the soil would be of a very rude and inartificial kind. A very slight stirring up of the surface, by the help of implements clumsy in form and inconvenient in use, was all that would be attempted. And where the soil was of average productiveness, and the population scanty, this, for a time, would be all that was required. But even the richest virgin soils would, in the course of time, and by continual cropping, become exhausted. One of two things, therefore, became indispensable;—either to break up new lands, or to restore the productive powers of the old. The former would, for some time, be adopted; but as this would not always be practicable, the latter would be forced upon men as a matter of necessity. It would soon be observed that certain substances increased the fertility of land, and thus nature's own voice would direct them to employ these and similar substances, when needful. Chemistry, by showing the constituent parts of plants, and the food by which they were nourished, greatly increased the number, and improved the quality, of manures. To that of the farm yard, accordingly, have been added lime, marl, crushed bones; and, more recently, oceans have been traversed to convey the fertilizing guano, to nourish the grain and roots that are required to feed the swarming millions, in the more northern regions of our globe.

On this subject, as on almost every other, wild theories have been advanced. It has been imagined, for instance, that, by the application of Chemistry, manure might be so reduced in bulk, and applied in so concentrated a form, as, in effect, to save the whole expense of transport, and nearly the whole labour of spreading it on the land. The well known Lord Kames, (whose beautiful residence at Blairdrummond, in the neighbourhood of Stirling, I am sure Dr. Robb has often visited,) is said to have believed in the possibility of such a consummation; and to have said to a farmer upon his estate, that "the day might come, when he would be able to carry out in his snuff box, all that would be required to manure a field." The practical good sense of the farmer prompted the reply—"I am afraid, my lord, if you were to carry out the manure of a field in your snuff box, you might bring home the produce in your waistcoat pocket."

There is scarcely any country in which the study of Agriculture is not of the highest importance. It is peculiarly so in our father-land, and scarcely less so in the land in which we dwell. Hitherto, I am afraid we must acknowledge, that, in this Province, it has been sadly neglected. The very first principles of the science have, in the great majority of cases, been either unknown or disregarded. Little care has been taken to increase the quantity or improve the quality of manures; little attention has been paid to the rotation of crops, to draining, or to allowing land those periods of rest, which nature shows to be needful for every thing, after long-continued action. Experience, which is said to be the only teacher to which a certain class of persons will listen, does not seem as yet to have made much impression on the minds of our New Brunswick farmers. Though they have been driven to the conviction that there is something wrong, because they often behold their fairest hopes blasted; in too many cases they seek not to know what is amiss, and still hold on their former course. They lay the blame on any thing rather than themselves. They talk of the shortness of the season for farm-work, the expense of labour, and the unproductiveness of the land;

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when, all the while, the remedy of most of the hardships they complain of is in their own hands, if they would only open their eyes to perceive it, and put forth the energy that is necessary to apply it. I trust that a better day is now beginning. Some individuals have shown how much may be accomplished by skill and activity. Others, I hope, will follow their example; and, ere long, New Brunswick will be independent of other countries for the supply of her bread-stuffs, for which such sums are now annually drawn from her not very abundant capital. I would say to the inhabitants of this land, of every class, in the words of Thomson—

"Venerate the plough!  
 "In ancient times, the sacred plough employed  
 The kings and awful fathers of mankind:  
 And some, compared with whom your insect-tribes  
 Are but the beings of a summer's day,  
 Have held the scale of empire, ruled the storm  
 Of mighty war; then, with unwearied hand,  
 Disdaining little delicacies, seized  
 The plough, and greatly independent lived."

In the month of May, Dr. Jack read a very able paper on the Plurality of Worlds. At the time when you were listening to it, I was tossing upon the waves of the Bay of Fundy, being then on my way to Canada. I had not, therefore, the pleasure of hearing the Paper read by its learned author; nor did I enjoy the benefits of the remarks that were made upon it by the members, on the occasion of its delivery. It has since, however, been put into my hands, and I have perused it with great attention and unmingled delight.

The question must, I think, have suggested itself to the reflecting mind from the beginning—What purpose were those brilliant bodies that bedeck the heavens designed to serve? Were they merely intended to shed a lustre over the globe we inhabit; or to furnish a richer treat to the eye of the contemplative admirer of the Almighty's handiwork? Before the invention of the Telescope, little was known of the number, and still less of the individual size, of these bodies; and up to that time, so far as I am aware, the question was never raised, whether or not they were inhabited by beings like ourselves. Modern discoveries, however, having enlarged our conceptions of the boundless extent of the visible creation, and shown the

apparent suitableness of at least some of the heavenly bodies, for being the habitation of creatures constituted in some measure as we are, it has very naturally been asked, "Are we to conclude that so much skill has been employed in their construction and adornment, and after all, are they left an unpeopled waste?" The question has been beautifully and forcibly stated by Dr. Chalmers, in one of his well-known *Astronomical Discourses*; and though, probably, you are all familiar with the passage, you will thank me for quoting a few sentences.

"The world in which we live, is a round ball of a determined magnitude, and occupies its own place in the firmament. But when we explore the unlimited tracts of that space, which is everywhere around us, we meet with other balls of equal or superior magnitude, and from which our earth would either be invisible or appear as small as any of those twinkling stars which are seen on the canopy of heaven. Why then suppose that this little spot, little, at least, in the immensity which surrounds it, should be the exclusive abode of life and intelligence? What reason to think that those mightier globes which roll in other parts of creation, and which we have discovered to be worlds in magnitude, are not also worlds in use and in dignity? Why should we think that the great Architect of Nature, supreme in wisdom, as He is in power, would call these stately mansions into existence and leave them unoccupied? \* \* \* Are we to say that they are so many vast and unpeopled solitudes; that desolation reigns in every part of the universe but ours; that the whole energy of the Divine attributes is expended on one insignificant corner of these mighty works; and that to this earth alone belongs the bloom of vegetation, or the blessedness of life, or the dignity of rational and immortal existence?"

To show that there is no good ground for believing that the globe we inhabit is the only one, of all that roll in the immensity of space, containing animated and intellectual beings, is the object of Dr. Jack in the Paper now under consideration. He has first brought before us, in a very striking manner, the

extent of the material universe, rising from this earth to the other planets of our system; then to the fixed stars, each of which he supposes, (apparently on good grounds,) to be a sun, the centre of another planetary system; then carrying us away into the depths of space, to the galaxy, and among the nebulae, which the most powerful telescope has hitherto been unable to resolve, but which may consist of separate suns with their systems of planets;—and after all, leaving a boundless extent, far beyond the investigation of man, or, it may be, even beyond the flight of a Seraph's wing:—we feel ourselves lost and overwhelmed, in contemplating the magnitude of the wondrous structure raised by the hand of the Almighty Architect. How little does man, or even the whole human family, appear, when viewed in this light! We need not wonder that such a thought suggested the exclamation of the shepherd youth, who afterwards filled the throne of Israel, "When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained, What is man that thou art mindful of him? and the son of man that thou visitest him?" Of this, the question quoted by Dr. Jack from the anonymous author of the *Plurality of Worlds*, is simply a paraphrase. "How then shall the Earth, and Man its inhabitant, thus repeatedly annihilated, as it were, by the growing magnitude of the known universe, continue to be any thing in the regards of Him whose care embraces the whole of the works of His power? Least of all, how shall Man continue to receive that special, preserving, judicial, personal care, which religion implies, and without the belief of which, any man who has any religious thoughts, must be disturbed and unhappy, desolate and forsaken?"

There is a difference, however, between the exclamation of the Psalmist and the question of the Philosopher. The former is the utterance of a sentiment of adoring wonder; the latter, that of a felt difficulty. Not that this difficulty has any power over the mind of Dr. Jack, but he has stated it as the ground on which some have denied the existence of other inhabited worlds besides our own. The difficulty, however, has arisen from

confounding things that differ. Man is soon overborne by a multiplicity of cares ; his finite faculties are only capable of a certain limited exercise. But if we reason from the finite to the infinite, we violate the first principle of all sound philosophy. The mind of the Deity is not only, *in some degree* more comprehensive than that of man, but *infinitely so*. Multiply worlds, and systems, and moral agents, as you please, I have no difficulty whatever in conceiving that He whose existence is eternal, and whose abode is all space, can superintend and govern them all. So that, in the language of Dr. Chalmers, "there is not one single world in that expanse which teems with them, that His eye does not discern as constantly, and His hand does not guide as unerringly, and His Spirit does not watch and care for as vigilantly, as if it formed the one and exclusive object of his attention."

But we are not entitled to conclude, *à priori*, that the planets and other heavenly bodies are inhabited, unless it can be shown, on reasonable grounds, that they are *habitable*. Now the negative of this has, at least in regard to some of them, been very strenuously maintained. Some have been asserted to be nothing but a mass of vapor ; some to be globes of water, either in a solid or fluid state ; some to have no traces of an atmosphere ; and some of the planets in our own system, we know, are placed so far remote from the sun, that the light they enjoy would be but a feeble glimmer, and the heat, it is conceived, would be so limited, or in other words, the cold so intense, that no organized beings could exist in those "regions of thick-ribbed ice."

Now, first, in answer to this objection, I would say that, while we assert the probability of *other* worlds being inhabited, we admit that it would be rash to maintain that *all* are inhabited, or, at least, that they are inhabited by beings of such a type as man. But there is no inconsistency in supposing that creatures might be formed, with an organization adapted to every variety of circumstances.

And, secondly, we are not warranted in assuming it as a fact, that other worlds, supposed to be unfit for human habitation,

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are so in reality. Even supposing that the inhabitants of the planet Neptune are such creatures as we, is it quite certain that the light and heat they receive from the sun would be so scanty as to make life to them impossible? We believe it is now an admitted fact, that possibly the light, and certainly the heat, received from the sun, are not diminished in the ratio of the distance through which they have to pass. In the language of Professor Powell, quoted by Dr. Jack—"On this point there is one consideration often not sufficiently attended to. The solar heat is entirely of a peculiar nature, unlike that which emanates from a terrestrial hot body, simply cooling or radiating its heat. The solar heat is not derived from the mere cooling of the sun; but is conveyed, as it were, *in* the rays of light, as a *vehicle*, and never becomes *sensible as heat* till the *light* is absorbed. It is, therefore, probable that the rays may owe their extrication from the sun to *some other cause than elevation of temperature*. It is an effect elicited or produced by the action of certain rays, which are no more properly rays of heat than a galvanic current can be called a current of heat, because, when stopped, it excites heat. The solar rays pass freely, not only through empty space, but even through air and all transparent media, *without heating* them; they never excite heat till they are impeded by a solid, or, at least, an opaque body."

And, lastly, if there be *some* of our planets that appear to be unfit for human habitation, there are *others* that exhibit evidence of obvious fitness for being the abode of such creatures as man. On this point, suffer me again to use the words of Dr. Chalmers—"It lends a delightful confirmation to the argument, when, from the growing perfection of our instruments, we can discover a new point of resemblance between our earth and the other bodies of the planetary system. It is now ascertained, not merely that all of them have their day and night, and that all of them have their vicissitudes of seasons, and that some of them have their moons to rule their night and alleviate the darkness of it; we can see of one, that its surface rises into inequalities, that

“ it swells into mountains and stretches into valleys; of another, that it is surrounded by an atmosphere which may support the respiration of animals; of a third, that clouds are formed and suspended over it, which may minister to it all the bloom and luxuriance of vegetation; and of a fourth, that a white colour spreads over its northern regions, as its winter advances; and that, on the approach of summer, this whiteness is dissipated—giving room to suppose that the element of water abounds in it, that it rises by evaporation into its atmosphere, that it freezes upon the application of cold, that it is precipitated in the form of snow, that it covers the ground with a fleecy mantle, which melts away from the heat of a more vertical sun; and that other worlds bear a resemblance to our own, in the same yearly round of beneficent and interesting changes.”

I could have wished to have entered more fully into the arguments of the learned Professor, but your time will not allow farther discussion. In my opinion, they fully bear him out in the conclusion to which he has come, not indeed in these words, but to this effect—That it is, at least, probable that other worlds beside our own, are inhabited by rational creatures; and that the Great Author of nature, when he looks abroad over the works of his hands, beholds throughout, not merely dead, unconscious matter, but animated, intellectual, and immortal beings.

Dr. Jack's paper is composed in a style of most transparent clearness. It is impossible to misapprehend his meaning. While he reasons with the closeness of one whose mind has been accustomed to the severest mathematical analysis, every step in the series rising above, and based upon, the preceding one, his argument is, at the same time, so luminous, that it is a positive pleasure to accompany him through all its stages. If I might venture to hint what I would not call a *fault*, but a *defect*, I would say that it struck me that the learned Doctor has not completed his original plan. What he *has* done he has done admirably. Something, I apprehend, yet remains to be added. I would fain hope that he will finish the work; and

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that, when so completed, the knowledge of its value will not be confined to the members of this Society ; but that it will be given to the world, either as a separate publication, or in the pages of some scientific Journal.

In the month of June, Mr. Wilkinson read a very able and interesting Paper, which, with characteristic modesty, he entitled "Thoughts on Colonization." In reviewing this Paper, I am glad to feel that my task is a very easy one. The Society, with one voice, have already pronounced their opinion upon its merits, by the expression of a very earnest wish that it should appear in a form such as to render it more accessible to the public at large. In this wish I fully concurred at the time; nor shall I yet, without much reluctance, abandon the hope that our expectations may be realized, calculated, as I think it is, to be most beneficial, not only to the inhabitants of our own Province, but to those of our father-land, and especially to such as are proposing to seek a home on this side of the Atlantic.

We have been so long accustomed to hear our Province run down as "a barren wilderness;" "a very Siberia;" "a country whose climate was execrable in the extreme;" "whose year was made up of eight months of winter, and four of bad weather;" that some of its inhabitants, if they have not actually agreed in all the evil that has been said respecting this land of their adoption, have, at least, silently acquiesced in it, and, by making no defence, have allowed judgment to go by default. A stream of immigration has been, year after year, pouring into Canada and the adjoining States, and scarcely an attempt has been made,—by making known the capabilities of this Province, as a place where vast multitudes might settle down in comfort, and by diligent perseverance, in due time attain to independence,—to divert even a driblet of that stream into those extensive districts, within a short distance of where we now sit, that but wait the hand of the cultivator, to convert them into plains of abundant fertility.

Mr. Wilkinson's paper is calculated completely to silence the taunt that we have often heard respecting our Province,

that, while other countries are advancing rapidly in the march of improvement, she is standing still, if not retrograding. He has shown, by an array of facts,—which are stubborn things, and cannot be disputed,—that as regards the increase of population, the extension of commerce, the growth of our cities, and all the elements that go to make up the prosperity of a country, New Brunswick has advanced, at a rate fully equal to the United States, in the first ages of their history. She possesses, as he has well shown, all the resources that are necessary to enable her to pursue a career of rapid improvement : a climate, which a medical gentleman, who had resided in all quarters of the world, has repeatedly declared, in my hearing, to be (I use his own words) “ the healthiest in the round globe ;” a soil, at least not inferior in fertility to that of the adjoining States or of Eastern Canada ; immense tracts of forest land, covered with the most valuable timber ; a sea-coast extending not less than 600 miles, every creek and bay of which is swarming with fish ; harbours where all the ships of the world might be moored in safety ; rivers of ample breadth, some of them navigable hundreds of miles from their mouth ; minerals, too, as we have lately had occasion not only to hear but to see, of every variety and of the most valuable description. She has also “ ample room and verge enough,” for the settlement of many thousands of immigrants, land for them all to cultivate, plenty of work for them all to do, and for which they would receive liberal remuneration. Surely a country that possesses such capabilities within herself for the support of a large population, ought not to be stigmatized as a poor country, to which nobody would go who could avoid it, and where nobody would stay who could get out of it.

Mr. Wilkinson has thrown out a warning, which I wish could be rung in the ears of every inhabitant of this Province, from the Bay of Fundy to the Restigouche, against a too exclusive dependence on lumbering, to the neglect of agriculture. The former may afford a readier return for capital expended ; but the frequent fluctuations of the price of timber in the home market, render the traffic therein a very precarious business.

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And besides, it is continually impoverishing the country. Agriculture, on the contrary, though the returns it affords may not be so immediate, is less uncertain; and every additional acre that is brought into cultivation adds to the wealth of the country.

There is also a suggestion, which I hope to see acted upon, for the establishment, in the Province, of a model and experimental farm, on which the most improved modes of tillage, cropping, manuring, &c., may be tried; and where our young men may be trained to a better system of farming than has hitherto prevailed. This proposal I shall take the liberty of giving, in Mr. Wilkinson's own words. "I am very favourably impressed with the value of experimental and model farms, as means of awakening and keeping alive an agricultural public spirit, as well as of instruction and improvement to individuals. Such an establishment amongst us is no new suggestion, but it has not yet been adopted. Under the supervision of a duly competent head, and specially conducted as a school of agriculture, in such manner as experience elsewhere may have proved to be most economical and effective, could hardly fail to be attended with great and durable benefit, in comparison with which any moderate expenditure would be trivial."

I formerly had occasion to review a paper of Mr. Wilkinson's, and felt myself called upon to express high approbation of the clear and simple style in which it was composed. Were I to say that, in this now under review, he has fully sustained his former character, I should be speaking the truth, indeed, but not the whole truth. He has, in my opinion, surpassed his previous efforts. In this paper, there is not only a simplicity, but a power and vigour of style, indicating an amount of practice in composition, for which, considering Mr. Wilkinson's professional engagements, I confess I was not prepared. I felt this when I listened to his paper when he read it before the Society; and, having since enjoyed the privilege of quietly and leisurely perusing it in my own study, not only has this opinion been confirmed, but my estimation of it greatly increased.

There is more of the ease of practised authorship manifested than I was at all prepared to expect. He has brought the whole subject of Colonization, (and particularly as affecting this Province,) before us, in such a pleasing manner, that I feel our best thanks are due to him, for a paper that would do honor to the transactions of any Society, even of much higher pretensions than our own.

After the usual Summer recess, the business of the Society was again resumed in the month of October, by a Paper by the Rev. Mr. Ketchum, on Chronology. I remember, long ago, in studying the Logic of Aristotle, there were certain mysterious things which came in my way, and which bore the name of Categories. I recollect that two of them were expressed by the words "*ubi*" and "*quando*." It is the province of Geography to decide the *ubi*, or *where*, and that of Chronology to determine the *quando*, or *when*, of the facts recorded in the historic page. We all know how important it often is to fix the precise point of time at which a particular event occurred. It was the saying of one of the profoundest thinkers that the world has ever produced, that "History is Philosophy teaching by example." Now, much of the value and impressiveness of a lesson often depends upon the time and the circumstances in which it is given. A knowledge of *the where* is of great importance to the right understanding of past events; but a knowledge of *the when* is infinitely more indispensable; that is, that while Geography is useful, Chronology is pre-eminently so. Without an acquaintance with Chronology, history would be merely a confused mass of facts, as uninteresting as they are worthless for any good. It would be as if all the stones, and bricks, and beams, and boards that were needful for the construction of a house, were to be tumbled together in a heap. The materials of the house are there; but, not being arranged, they are merely an unsightly mass, serving neither for ornament nor use.

To make history interesting and instructive, then, we must call Chronology to our aid; and the Reverend gentleman who favoured us with this paper, has shown, in a very able and in-

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teresting manner, the advantages to be derived from the study of that science, whose nature and uses he undertook to unfold. He showed clearly how necessary it is, in judging of the causes and consequences of events in secular history ; but that it is greatly more requisite, when we carry our researches into the Records of the sacred penmen. Secular and Sacred History are like two rivers that run parallel, and that may thus sometimes even meet in the same channel ; or, at least, some portion of the stream may occasionally pass reciprocally from the one to the other. Now, without a knowledge of Chronology, it would be impossible for us to show where and how they meet, harmonize and combine.

I must do myself the pleasure of quoting a passage, equally striking in thought and beautiful in expression, in which Mr. Ketchum points out the importance of studying secular history in connexion with sacred. You have heard it before ; but, if I may judge of you by myself, I am persuaded you will be well pleased to hear it again.

“ It will at once be admitted as of vast importance, to establish a connexion, as exact as possible, between events recorded in the Sacred Scriptures, and those noticed by the most authentic Heathen Historians. In this way, additional proof is gained to the credibility of Revelation, and to the fulfilment of prophetic declarations. Heathens themselves thus, unconsciously, bear witness to the truth, and all may plainly see the finger of the Almighty.

“ Again, it is of deep moment to the student of History, and adds greatly in interest to the subject, to mark the synchronology of the most important events in the History of the World. As we read in the Sacred Records of the dealings of the Almighty with His ancient people, who would not know something of events going on at the time, in that great world around, of which that people seemed to form so very insignificant a part ? Who would not, if he could, know something of what was going on elsewhere, at that distant age when Abraham was called to pass over the Euphrates, and live the life of a pilgrim on the land assigned

“to his descendants? Who is not glad to find out the very  
 “significant fact that while Judges ruled in Israel, Egypt,—the  
 “then mighty Empire of the age,—was overrun by those Shep-  
 “herd Kings, about whom there has been so much conjecture,  
 “and not the *least* probable that they were the remnant of those  
 “mighty warriors driven out of the land of promise; and  
 “that these exiles from Egypt were seen landing on distant  
 “shores to form the several dynasties of Greece? Who does  
 “not feel it of great interest to know that, while David and  
 “his successors reigned in splendour and power at Jerusalem,  
 “in the East, Assyria was growing up to be a mighty and  
 “dreaded Empire, the appointed scourge of an ungrateful  
 “people? That about the time when Ahab ruled in Samaria—  
 “on the plains of Troy were gathering those warrior hosts,  
 “whose deeds of valour have been so well preserved in classic  
 “story? That while Assyrian soldiers were driving Israel  
 “into irredeemable captivity—on the banks of the Tiber, a few  
 “humble dwellings were being built, to form, in a very few years,  
 “the Mistress of the world? That about the time the armies  
 “of Greece became at length wearied into peace, after the  
 “Peloponnesian war, the History of the Old Testament had  
 “ended? And when that event occurred, which will form a  
 “new æra in Chronology—that event exceeding in importance  
 “all that has ever occurred on the earth,—who would not gladly  
 “enquire what then engaged the attention of Generals and  
 “Statesmen—whether the Temple of Janus was shut, when  
 “the angels came to announce the birth of the King of Kings,  
 “in the Manger of Bethlehem?”

Had time permitted, I should have been glad, by availing  
 myself of the materials so amply provided by Mr. Ketchum,  
 to have said something about the great historical æras that are  
 most generally in use, and to which intermediate dates are  
 commonly referred. I must, however, pass over what remains  
 of the paper, with a very few remarks.

In all countries that have received the Sacred Records, there  
 are two grand æras, to which all others are subordinate—the  
 Creation of the World and the Nativity of Christ. There is some

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degree of uncertainty with respect to the former ; and this uncertainty takes its origin from a period, in regard to which our knowledge is very limited. The Sacred Writings alone furnish all the information we possess on the history of our world, for at least half the period it has existed. The evidence of one credible witness, it is true, in the absence of all opposing testimony, may be admitted as satisfactory ; but it so happens that, in the different translations of the Scriptures, their testimony is made to vary, to a very considerable extent. This is chiefly the case in regard to the ages of the Antediluvians ; and by adopting the dates of the Septuagint version, the Deluge is placed at a period not less than 600 years more remote from the Creation, than it would be if we adhered to the Hebrew Text. This discrepancy may, to some extent, be accounted for, by the imperfect method of representing numbers in those early days, when the first written records were prepared ; by the frequent copies that were made by the hand, in which, without a perpetual miracle, occasional errors were unavoidable ; and perhaps, in some rare instances, by variations introduced to serve a purpose. We have much cause for thankfulness, however, that He who gave us His Word at first, has watched over it, during the long series of ages, which, in the midst of many storms and perils, have brought it down to us, as we have every reason to believe, uncorrupted and entire. No important doctrine, no interesting fact is, in the slightest degree, affected, by all the variations of reading, and all the differences of dates that occur, in all the versions and copies that have ever been made, of that Book which contains the revelation of God's will to Man.

I feel that we are deeply indebted to the Reverend Author of this Paper, for the patient investigation, and diligent research, which he has brought to bear upon the very important and deeply interesting subject, which he undertook to bring before us. In pursuing his enquiry, he must have encountered difficulties of no trivial kind ; but he has manfully grappled with them, and satisfactorily disposed of them. I believe that he has felt that such labours were their own reward ;

and, while we have been instructed and entertained by their result, he has derived no small benefit from them to his own mind.

At the three successive meetings that took place, in the months of November, December, and January, our indefatigable Secretary gave us a very full account of the Mineralogy of this Province. He divided his subject into three parts, each of which formed the ground-work of an address, at one of the meetings above specified. At the meeting in November, he described those minerals that have *carbon* for their basis: in December, he brought before us the minerals that have an *earthy* basis: and last time we met here, we were made acquainted with those minerals that possess a *metallic* basis. On these several occasions, the verbal description of our learned Secretary was illustrated by a very large and well arranged selection of the different kinds of minerals brought under our notice. Not unmindful of the saying of Horace—

"*Segnius irritant animos demissa per aures  
Quam que sunt oculis subjecta fidelibus,*"

he addressed himself at once to the ear and to the eye, so that, while we listened to his description of any particular mineral, we, at the same instant, saw it before us.

Some have proposed a much more complicated classification of minerals than that adopted by Doctor Robb, but I am not aware of any that is more distinct and intelligible. I can conceive no arrangement more appropriate than that which includes in one class all that possess a common basis, however diversified they may be.

I had the privilege of listening to all the three parts of Dr. Robb's address, and I acknowledge myself indebted to the learned Gentleman for much very valuable instruction. But as these Lectures were unwritten, they are, of course, inaccessible to me now; and it would be presumption in me to attempt any review of them. We have all felt that, while "*littera scripta manet, vox audita perit.*" Accordingly, I regret to say, that much that I heard, in the course of these Lectures, has, as far as regards myself, "*perished.*" I acknowledge it to be entirely beyond the power of my memory to retain such

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a mass of facts as were presented to us ; more especially, as so many of them were new to me. And even if I could recall every word, the Lectures were such as not to admit of abridgment. Still farther, if they *could* be abridged, I have not a sufficient acquaintance with the science in question to undertake it.

But though my remarks on these Lectures must, for many good reasons, be very brief, I am sure you will not suppose that I, therefore, think them of little importance. On the contrary, I do not know that any subject has ever been discussed at this board, that was so important to the Province at large. I think it must have surprised you all, (I know it did me,) to learn that the minerals of this country were so numerous and so valuable. We may have few of what are called the precious ores. Silver and gold, if they exist at all, have not yet been discovered to any great extent. Nor do we abound in gems, which Dr. Robb poetically called "the flowers of minerals." But we have iron, in beds apparently inexhaustible. And in many places, we have most valuable coal, which has been quaintly styled "the black diamond." And our learned Secretary is well able to tell the people of this land of the mineral wealth that is to be found within her borders. Possessed of these, we do not need to grudge India her gems, nor California and Australia their gold. When our forests have been cut down, and lumbering shall have ceased, New Brunswick, I venture to say, will find, in the produce of her fertile fields, and her valuable mines, a source of riches far more certain and lasting. When the time comes, (and it seems now to be drawing near,) when the construction of our Railways from one end of the Province to the other, shall be set about in good earnest, and prosecuted with vigour, as the demand for iron will thus be greatly increased; we may expect that more capital will be invested in the business, and ample remuneration obtained by the enterprising manufacturer of that metal which, without a figure, is really more precious than gold. If we can furnish iron for our own railroads, (and I understand it is perfectly practicable,) the saving to the country will be enor-

mous. The money paid for it will be expended within the Province: it will go to pay the wages of the workmen, and the interest of capital invested in the works; it will cause a largely increased demand for agricultural produce, and thus encourage and extend the operations of our farmers. And why should we not look forward to the time when, instead of timber, we shall export iron, and thus, it may be, in the course of no great number of years, add, in a degree beyond our calculation, to the population, the wealth and the prosperity of this land where our lot is now cast?

Before dismissing this subject, I may be allowed to express my regret, (and I believe all now present will join with me,) that our able Secretary's most interesting information respecting our minerals should pass away and be forgotten. I am not aware that any account, so full as that which he gave us, is in existence. Surely, there ought to be some means adopted to provide a statement of recognized authority, respecting the mineral wealth of our Province, for the information of our statesmen and men of capital. I trust Dr. Robb may be induced to commit to writing, at least the substance of what he has already delivered to us. And I should think that a portion of the public money would be well and profitably expended, in causing such a Report to be printed for general circulation. Nor is this all. I have already alluded to that extensive collection of specimens of the minerals of the Province, so admirably arranged and labelled for convenient reference, which we have repeatedly had before us on the table. No one who has seen these can doubt, for a moment, that no small amount of toil, and money also, must have been expended, in thus collecting and arranging them. In doing this, Dr. Robb has been conferring a *public* benefit, and ought to be *publicly* rewarded. I am strongly of opinion that our Society, as a body, ought to make an urgent appeal to the Government, for some remuneration to Dr. Robb. I have a firm conviction that, were this done, our accomplished Secretary would immediately be requested to draw up for publication, a Report on our Provincial Mineralogy, explanatory of that beautiful col-

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lection now in his possession; and as such a labour would be well entitled to a reward, I trust that the learned Gentleman will be liberally compensated for his trouble, not only in preparing the Report, but in collecting the specimens. I have thrown out these suggestions without any authority from Dr. Robb, and even without his knowledge. I hope he will pardon me, if I have said any thing that is calculated to give him uneasiness. I have been so very strongly impressed with a sense of that debt of gratitude which the country owes him for his public services, that I gladly avail myself of this opportunity to express my sentiments, and to add my earnest hope that the debt will not be long unpaid.

There is one thing connected with our proceedings during the past year, on which, though at the risk of being charged with tediousness, I must yet say a few words. We have, as you are aware, nine meetings during the twelve months; and, at one of these meetings, it is provided that the President's Annual Address shall be delivered. Eight papers annually are, therefore, required from the rest of the members. Now it must have struck you, that, of the eight papers or addresses which I have had to review this evening, as making up the transactions of the year that has now closed, Dr. Robb has given *not fewer than five*. I am well aware of our able Secretary's ample stores of information, and of his willingness at all times to produce them, for the entertainment of the Society; but, I must say, I think it is *too bad*, that he, in his own single person, should be called upon to do more than all the other members put together. But a very little more, and instead of being, as was intended, a *Society* for mutual improvement, we should more properly be styled a *class*, with Dr. Robb for our *Professor*, and *that too without a salary*.

I would take the liberty to suggest, then, that, before we part this evening, at least eight gentlemen should pledge themselves to produce each a paper, during the current year; and to make a beginning, I am willing that my name should stand as one of them. It is, no doubt, far easier to go on, from year to year, as listeners; but, by refusing to take an active part in the

business of the Society, we do justice neither to ourselves nor to others. I speak from experience when I say that it does a person much good, to be compelled to such a vigorous forth-putting of intellectual exertion, as is required to prepare such a paper as is usually produced in this place. So long as we put off with the indolent apology "I can't," we shall make little progress in any thing. It will not be till we have experienced the satisfaction of *giving*, as well as *receiving*, knowledge, that we shall derive from this Society, all the benefits which it was designed to confer.

I have now finished the duties which devolved upon me when, at this time last year, in obedience to your call, I took possession of this chair. If, during the time that I have occupied it, or now when I am about to leave it, I have, in any measure, gained your approbation, the knowledge that such is the case will be very gratifying to my feelings. I have always taken a deep interest in the prosperity of the Fredericton Athenæum, and, while I have it in my power, I shall always continue to do so. I have derived much pleasure and instruction from our meetings together, for these ten years past; and I hope still to enjoy the same privilege, for many years to come. What may be in the womb of time we, short-sighted mortals, cannot tell. Change is stamped on all things here below; but I hope that our Society will flourish and extend its influence, even when we, who first composed it, shall have passed away from the stage of time.

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