Hawke's Bay Philosophical Institute.

ANNIVERSARY ADDRESS

BY THE PRESIDENT,

WILLIAM COLENSO,

F.R.S., F.L.S., ETC.,

Delivered to the Members of the Society, at the Opening Meeting of the Session, 1888-9.

"Slave to no sect, who takes no private road,
But looks through Nature up to Nature's God."
POPE, "*Essay on Man.*"

Post tenebras lux.

Napier:
PRINTED BY R. C. HARDING, HASTINGS-STREET.
1888.

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HAWKE'S BAY PHILOSOPHICAL INSTITUTE

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THE PRESIDENT, WILLIAM COLENSO

F.R.S, F.L.S., ETC

Delivered to the Members of the Society, at the Opening Meeting of the Session, 1888–1889.

LADIES AND GENTLEMEN,

Members of the Hawke's Bay Philosophical Institute.

In my taking the President's chair on this occasion, being the opening of our Sessional meetings for this year, 1888, I must, in the first place, thank you, for your having again unanimously elected me to this office. And while it is my pleasing duty to do this, and to assure you I will endeavour to do my best to fill it creditably,— I feel a certain amount of diffidential fear, lest I may fail, and so not come up to what you may have been led to anticipate; and this arises from many peculiar circumstances, which I need not particularize.

And here, *in limine*, before that I enter on my Address, in which I shall necessarily have to touch on many and diverse matters, I would beg permission to use the introductory words of a celebrated man of history (the Bishop of Hippo), as used by him nearly 1500 years ago:—

"Quisquis hæc legit,
ubi pariter certus est, pergat mecum;
ubi pariter hæsitat, quærat mecum;
ubi errorem suum cognoscit, redeat ad me;
ubi meum, revocet me."[1]

From the published Report of our Council for the last year's Session, which you have seen, I find there were 13 Papers on various

1 *Ed:* Further let me ask of my reader, wherever, alike with myself, he is certain, there to go on with me; wherever, alike with myself, he hesitates, there to join with me in inquiring; wherever he recognises himself to be in error, there to return to me; wherever he recognises me to be so, there to call me back. St Augustine, De Trinitate I, III, 5.

subjects read here by Members of this auxiliary branch of the New Zealand Iiistitute (luring that period. As the annual volume of " Transactions " published by the Institute has not yet been received by us, we do not at present know how many of those Papers may have been selected for publication in it; I hope, however, that our Society will shortly find, that, if not all, a fair proportionate number will have again passed their ordeal.

I confess, I would much rather have seen the expected annual volume of "Transactions";—seeing, too, we are later than usual in opening our Session; as from it we should have learned the number, the variety, and the quality of its Papers—contributions from Members of the New Zealand Institute scattered throughout the Colony. And these Papers, or some of them, in brief review I might with pleasure now bring before you; just to show the working of the united society during the past year, and not unlikely serving to stimulate this branch of it to greater exertions.

I have also noticed in our Council's Report, just adverted to, that our Papers were not so many as during the previous Session of 1886,—though several of them were both long and important; this, I trust will not be the case during this year. I should like to see a much larger number of Papers, (even if some were to be shorter,) on the many and varied subjects which lie within the large and comprehensive range of our Society, as laid down in §1 of its Constitution:—viz.,

"The Institute is founded for the advancement of Science, Literature, and Art, as well as for the development of the resources of the Colony."

Fairly considered, this embraces nearly (if not quite) all intelligent subjects: all that pertains to the nobler part of Man; all that makes life worth living for. There is scarcely a single subject throughout the long and wide range of philosophy, literature, philology, and general science—natural, technical, social, and inventive—but is free to us. Indeed, under our liberal Constitution, logically construed, it is hard to say what beneficial subject is excluded. I have heard it said, that Religion and Politics, speaking generally, were so shut out: but this I greatly doubt; that is, the real fundamentals of both,—or, what constitutes true Religion, and wholesome Politics: for certainly Science has (or will yet have) much to do with both; and with their aid the many resources of this great and rising Colony will he the better and earlier developed.

Some of you now present have heard me quote pertinent language from Sir J. Lubbock bearing on this subject; words which I would were engraved in brass or in marble, or written in letters of gold and stuck up in the forum; words which I now again with pleasure repeat:—

"Every increase in Science—that is, in positive and ascertained knowledge—brings with it an elevation of Religion.... The immense services which Science has thus rendered to the cause of Religion and Humanity has not yet received the recognition which it deserves. Science is still regarded by many excellent, but narrow-minded, persons as hostile to religious truth; while, in fact, she is only opposed to religious error. The time is approaching when it will be generally perceived that, so far from Science being opposed to Religion, true Religion without Science is impossible."—(*Origin of Civilisation*, p. 292.)

For my strong and growing belief is, that there is an eternal invisible golden or adamantine chain, extending alike through all, and continually and securely binding all together in their proper sequence for good: future times will show the truth of this. Now and then, here and there, a link of this chain is found, hit upon accidentally as it were, discovered (much as we daily hear of gold, and precious stones, and still more precious medicines,) by energetic ever-seeking ever-advancing man, for the common good of our race. And this, as I take it, is the essence and meaning of *true development*. Believing this, I as your President, would cordially invite you individually *to think for us*, and so to throw in your quota; to bear in mind that you are Members of this Society, and as such have each your common relative duties to perform; duties which cannot honourably be shirked; as Members you should contribute fairly from your mental stores, (whether, speaking figuratively, in silver three-penny bits, or in golden sovereigns,) to the "Transactions," in Papers read here during this present Session on which we are now entering.

For there is yet another prominent feature in our last Report, in connection with the relatively fewer number of Papers read here during the Session of 1887, viz.,—the still greater paucity of their writers. This, however, should not be; as it throws the working of our ship upon a few hands only; and this, if continued, will surely bring about—not a mutiny, but the stoppage altogether of her sailing For, in my opinion, this branch of the New Zealand Institute will droop, and wither, and die, if it becomes unfruitful. The Ordinary Meetings will not continue to be held unless there are original Papers to bring before the Members; and if this should happen, and consequently no Papers from the Hawke's Bay auxiliary to appear in the annual volume, then the

large number of Country and other Members, who, from their residing at a distance, are precluded from attending the Ordinary Meetings, will cease remaining subscribers. In this ship, or Hive, there should be no Drones. Our Society is both smaller and poorer than other kindred ones in this North Island—Auckland Wellington; happily there is no distinction made on this account; nevertheless we here in Hawke's Bay must feel it, and therefore it is the more imperative upon us, as a determined and devoted though small band, devoid of those large blessings which our elder sisters enjoy—in rich endowments,[2] princely gifts, resident learned scientific men, extensive libraries and museums,—to be active, to be penetrated with that genuine *esprit de corps*, which not unfrequently more than makes up for the want of everything else. In particular, let this very proper and praiseworthy spirit be shown in your attendance here on the regular nights of meeting; coming, too, in time for the fixed hour of opening, and also in the upholding the proper status of our young Society; I mean, the carrying-out all its standard Rules in their integrity, particularly Rule 3, which, I think, was too often infringed on during the last session. I mention this, as I have plainly perceived, that if care be not taken, our Ordinary Meetings are apt to degenerate into those of a low debating club; (*Facilis descensus Averni!*[3]) and so cease to remain an auxiliary branch of the New Zealand Institute, a society founded for a highly different purpose.

Moreover, this spirit is still the more needful, the more to be desired among us; when we consider our true position as an allowed intellectual Society, yet having no literate friends outside of us—if I may so speak. And this is certainly very sad, very different to what it should be; widely different I believe, to what it would be in the Old Country; and this I say not merely with reference to ourselves, but mainly with reference to the rising generation. For it is of no use blinking the fact; endeavouring to construe what we see and know in a more charitable than true light; which, however estimable a feature at times, is sometimes the bane of both Societies and places. And it would ill become me, at my advanced age and with my experience, to speak

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2 *WC:* From the "Report of the Auckland Institute for 1887-8," just published, I gather their investments to amount to £10,366, and their receipts far the year to be nearly £1000.

3 *Ed:* The descent of Avernus is easy. Virgil, *Aeneid*, VI. 126; ie, it is easy to slip into moral ruin.

from this Chair with bated breath on these important matters. About a month hack I received a letter from a lover of Natural Science and a close working-student of Nature, who is also an old Member of the New Zealand Institute in which he laments the ignorance, and the apathy of the young folks of the present day towards scientific pursuits and subjects; remarking, that during his late travelling in New Zealand he had made it his practice to endeavour to find out such, in order to strengthen them; but that he was sorry to say he had not met with *one*!— and such, too, I may add, is my own sad experience here.—

And here, I think, I should inform the Members of our Society, that original Papers written by others than Members themselves may he received and read at our Ordinary Meetings: this has been frequently done at some of the meetings of the larger and older branches—as at Auckland, Wellington, and Canterbury, and that too with advantage to all parties: indeed some of those papers have been also published in the "Transactions." Such papers, of course, must be introduced by a Member. It would be well for our Members to bear this liberal manner of acting in mind.—

The powerful and active enemies of Science and of general learning are—too great love of holidays and of idleness, of frivolity and of fleeting pleasures which yield no enduring satisfaction; which generally, if not invariably, look for more, never being satisfied, and mostly leaving "an aching void." And should there be, before the final close, a few hours or days free from pain and extreme weakness for reflection, then the sad heart-rending vista presents itself of time lost, of noble almost god-like faculties abused, of a wasted life! Our classical British poet, Thomson, might well exclaim, while meditating on such scenes:—

> "Where now, ye lying vanities of life!
> Ye ever-tempting ever-cheating train!
> Where are you now? and what is your amount?
> Vexation, disappointment, and remorse.
> Sad, sickening thought! and yet deluded Man,
> A scene of crude disjointed visions past,
> And broken slumbers, rises still resolv'd,
> With new-flush'd hopes, to run the giddy round."
>
> (*Winter.*)

To speak more clearly, to bring matters home, there are at least three classes here among us who stand aloof rendering no aid! Such needfu1 help is largely in their power to render; viz.1, the Clergy; 2, the

Principals and Head Teachers of our schools; and, 3, the Editors and Proprietors of our local Newspapers. As I take it, these all to a man should be found heartily aiding "Science Literature and Art," if not enrolled under its banner. At Home, the Clergy generally (especially Ministers of the Established Churches in their respective parishes) are found so engaged; also, the Professors and Heads of the chief teaching establishments, whether in town or country; and the Editors of all respectable Papers are always on the look-out and ready to advance the great good cause for the real welfare of the people. But such unfortunately is not the case here, and that stigma rests more prominently on this third class, because they controul the Daily Press—the most powerful engine of modern times for both good and evil. We, unfortunately, know from sad experience how truly careless our local Newspapers are with reference to us,—to our meetings, and to our read Papers; whereas, on the contrary, they might, if so inclined, render useful service, and be productive of much and lasting good.[4] It matters not what the subjects of the Papers read may be; whether "dry" Natural History ones, or more popular and interesting ones relating to our District, of which (as I have often heard it said) many of their readers in Hawke's Bay, and our Country Memmbers in particular, would rejoice to find even the mere outlines fairly given in the local News of the day. On the contrary, what do we find in them? Firstly, in importance, some Foreign amid Colonial telegrams, often interesting and of service, (for these, they, the Editors and Proprietors, have, and shall ever have my hearty thanks): but, secondly, what do we find? a horrid dissonant uncivilized semibarbarian lot! column after column; paper after paper; of most wretched information, composed of Races and their vicious belongings! Football and Cricket Matches (even those of schoolboys and Maoris!) *usque ad nauseam!* Inhuman Pigeon matches, at which tame birds issuing from a trap box are fired at, many wounded, a few killed! Fancy Dress Balls; Lawn Tennis; Pugilistic encounters; Skating Rinks; Foot-race matches; illiterate rustic clownish holiday Pastimes; a legion of Theatrical performances in endless variety, regularly kept up with their standing exaltations in puffing—

4 *WC:* Here, however, I should state, in justice to the Evening News, that this paper did on several occasions give a pretty full and fair report of our meetings; this was owing to the kindness of Mr. Hardcastle, one of our active members, who was usually present and who wrote those reports for that paper, with which he was connected. At such times there was quite a run for extra copies.

written, too, by the actors themselves! and so dressed up for the nonce, as if now the expressions of the audience themselves!! All making a continuous round of folly! leading to a complete dissipation of mind, and consequent loss of health morals and manners. In fact, to such an extent has this low craving after plays and pastimes, fun, frolic, frivolity and buffoonery been carried in this District, that it is almost an impossible thing to find a single Daily local without its News columns being more than half-filled with such trash!—

And when to all that is also added the low prurient *nouvellettes* with which those papers are further adorned; what wonder is it that "Larrikinism" (as it is called) should flourish as it does among us? Ever and anon we find the Editors of our Papers spasmodically muttering a weakly warning voice, against this insidiously increasing Colonial moral disease; but, I fear, they themselves, have yet to learn, that they are of its main causes, through their assiduously fostering all those things which encourage its wild and vicious growth. Such thoughtless doings seem to me, to be very much like the old Greek story of sowing the Dragon's teeth! If our Papers judiciously and constantly led Public opinion to higher and better matters, instead of pandering to low and depraved tastes, things in general would be much better among us; honesty would show its face, and Society be generally advanced in its tastes and pursuits.

No doubt some of those gentlemen connected with the Press (should they hear of these words of mine), may say—and rightly say—"Your Natural History and general scientific Papers are dry reading, uninteresting to the popular mind." No doubt of it: there is no royal road to learning. For, firstly, all beginnings are "dry" and distasteful; whether such be Euclid or Latin Grammar, or (to go down to the lowest rung of the ladder) A, B, C, first taught at the good mother's knee; but the eye and the mind should be trained to patiently look for and follow after the certain reward:—and, secondly, crime has always been more exciting than honesty: the constable was never so picturesque an object as the highwayman: the brigand has from time immemorial been deemed a more romantic personage than the common soldier. The best critics agree that the most interesting character in Milton's "Paradise Lost" is Satan. Why, in the great contest between right and wrong, between good and evil, between science arid ignorance, between light and darkness, which is always going on in this world, the low degenerate and evil principles should be allowed such odds in their

favour is one of those mysteries which no one has yet solved. But so it is; yet why literate men (like those I have mentioned) should also join in supporting such, is to me a still greater mystery. I note, that the Prime Minister of England lately said at a grand Conservative Dinner in London:— "We have nothing sensational to offer, only advice based on scientific principles"; and so I may say, *mutatis mutandis*, speaking here from this Chair on behalf of our Society,—We have nothing sensational to offer, only facts, and truths, and advice based on scientific principles.—

I have gently indicated that (in my opinion) our Clergy, and our principal Teachers should be much more active in Natural History and Scientific matters; but then to do so effectually they must themselves have a love for such things. If they possessed this faculty and assiduously cultivated it, our Teachers might do a good deal among the more advanced science-loving pupils under their care, particularly in country places. Certain I am of there being untold unknown mines of ore among them, which only require to be worked; or, in other words, hidden minds of thought—living embryos shut up in their mental eggs, awaiting perchance some kind foster-parent to timely incubate and evolve them. Such an occupation, in my opinion, forms the more pleasing portion of the Teacher's duty or work; it is this especially that more fully comes up with the poet's thought, when he says,—

> "Delightful task! to rear the tender thought,
> To teach the young idea how to shoot,
> To pour the fresh instruction o'er the mind,
> *To breathe th'enlivening spirit*, and to fix
> The generous purpose in the glowing breast."
>
> —THOMSON, *Spring*.

Scientific study should be largely inculcated, by kind and plain words, by Manuals, and by Example; for Science has extended into all portions of life. What I mean by a scientific education, is not the mere confined knowledge of that one branch taught, or thing brought more particularly under consideration, whether Euclid's problems or Natural Science—the science of living things,—as seen in the wondrous complex yet perfect and beautiful structure of a Fly, a Mussel, or a Moss;— for Beauty's best in unregarded things;—the mention of which as a useful study is too often met with a *cui bono*? For the opinion is often expressed, that certain scientific pursuits are not compatible with the business pursuits of life. But there is no greater fallacy than this; as we

may see in the living instances of many eminent men of our time. Sir J. Lubbock, for example, is one whose life disproves that charge; his scientific works, on Ants, Bees and Wasps, and other insects, are largely known, and it is hard to find a better man of business. And this notion or apprehension is not one of mere modern invention or conceit, although I fear it may have wonderfully increased of late years—even by "leaps and bounds," owing to the great prevalence and power of Mammon-worship, especially here in the Colonies. Some of the Members present this evening may recollect two Papers "on Nomenclature," read by me here about six years ago; in one of them I quoted some words of Sir J.E. Smith, the celebrated British Botanist, which seem to me to bear so intimately on this portion of my Address, and at the same time are so clear and simple, and pregnant with fine old English manly thought and feeling, that I venture to repeat them, (especially as those two papers were not published in the Transactions of the New Zealand Institute, being disallowed by the Editorial Board of Governors;) Sir J.E. Smith, writing sixty years ago, says:—

"We are no longer in the infancy of science,[5] in which its utility, not having been proved, might be doubted, nor is it for this that I contend. I have often alluded to its benefits as a mental exercise, nor can any study exceed in raising curiosity, gratifying a taste for beauty and ingenuity of contrivance, or sharpening the powers of discrimination. What then can be better adapted for young persons? The chief use of a great part of our education is no other than what I have just mentioned. The languages and the mathematics, however valuable in themselves when acquired, are even more so, as they train the youthful mind to thought and observation. To those whose minds and understandings are already formed, this study may be recommended, independently of all other considerations, as a rich source of innocent pleasure. Some people are ever inquiring, "What is the use" of any particular plant; by which they mean "What food or physic, or what materials for the painter or dyer does it afford?" They look on a beautiful flowery meadow with admiration, only in proportion as it affords nauseous drugs or salves. Others consider a Botanist with respect only as he may be able to teach them profitable improvement in tanning, or dyeing, by which they may quickly grow rich, and be then perhaps no longer of any use to mankind or themselves. They would permit their children to study Botany, only because it might possibly lead to professorships, or other lucrative preferment. These views are not blameable, but they are not the sole end of human existence. Is it not desirable to call the soul from the feverish agitation of worldly pursuits to the contemplation of

5 *WC:* By "science" here, Sir J. B. Smith particularly means that of Botany.

Divine Wisdom in the beautiful economy of Nature? Is it not a privilege to walk with God in the garden of Creation, and hold converse with his Providence? If such elevated feelings do not lead to the study of Nature, it cannot far be pursued without rewarding the student by exciting them." —(Introdution to Botany, preface, 6th edition.)

Now what I mean by a scientific education is, the teaching of the power of observing; the teaching of accuracy; the difficulty of attaining to a real knowledge of the truth; and the methods by which one may pass from that which was proved, to the thought of that which was also capable of being proved. The first thing to learn is the power of observing, the power of seeing things in their relations to other things, and the modifications they might undergo; this, though a difficult thing, is attainable. Science teaches not only how to observe, but how to record facts, and how to arrive at general conclusions upon facts. The habit of accuracy which Science inculcates, makes a man accurate in the ordinary business and pursuits of life. There are many people—good people who would not tell a lie, but for their lives they seem as if they could not tell the exact truth. Now science teaches the difficulty of attaining truth, and shows how to arrive at it. It is said of the celebrated John Hunter, who delighted in plain language, that he once said,—If he wished to sum up his advice to students, it would be, "Don't think; try." What he meant was,—When one was satisfied about certain principles, do not think that you can think what must necessarily follow, but try test experiment, observe, record facts; then you would see whether what you thought was true was really true.

I hope a better day is at hand for our Government Schools; when Education Boards (if existing), or Committees (when formed of proper literate men), will pay full attention to this one great qualification or main desideratum on the part of Teachers seeking situations: viz, their love for Natural Science and for Scientific study, and their aptness to teach such, both out of school as well as in school. Such a Teacher in a Country School would prove a real blessing to the youths under his care; while Teachers who are patrons and supporters of Racing, with its attendant evils,—betting, gambling, lying, and general dissipation,—(whatever their scholastic attainments might be,)—should be set aside; as, also, all who are smokers during school hours: for example is always more powerful than precept. And here I may remark, that it has ever appeared strange to me, that none of our many Teachers seem to be inclined this way—towards the Natural Sciences, though otherwise well-

fitted for their honourable posts; seeing, too, that their worthy Inspector of Schools, to whom this Society is so largely indebted, has from the beginning set them such a good example.[6]

And just so it should be with our working Clergy; especially, too, as so many of them have often been so loud in their denunciations of our "Godless Schools,"—as they are pleased to term the Government Schools of the Colony. Do they and their Sunday-School Teachers ever reflect on the utter incongruity of some of their teaching with the certain light of Science? Take, for instance, a single concrete example, of almost constant recurrence, in their Sunday Services, and in their Sunday Schools in teaching their Catechisms,—I mean the Fourth Commandment. And here I would prefer using the words of a favourite clerical author of mine, a high Church dignitary, the late universally respected Dean of Westminster; writing on this Commandment, he says,—

> "We cannot be called, as in Exodus, to remember that the earth was made in six days, for we most of us know that it took not six days but millions of ages to bring the Earth from its void and formless state to its present condition. The letter of the Fourth Commandment has long ceased."—(*Christian Institutions*, p. 342.)

I need not to dilate on this: for if the children are taught the letter only as infallible truth, the time is sure to come when they will know of its error, and then mark the certain consequences which must follow; for the law controlling the mind of man when set to work, is much like that of machinery—the strength of the strongest is that of its weakest part.—

My mentioning the Clergy, serves to remind me of an account of the opening by the Primate of England of the new Oxford Hall Bethnal Green, London; received by the last mail from England, which has greatly pleased me. This new hall is an addition to Oxford House, an institution founded by Oxford men for the social elevation of the working-classes, and in connection with it are four working-men's clubs. The new hall is capable of accommodating 900 persons, and has been erected at a cost of £1100. The Archbishop made several good and homely telling remarks; among others

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6 *Ed:* Henry Hill.

—"that the two real evils of Bethnal Green, were Drunkenness, and early reckless marriages. Drunkenness was an offence against all mankind, and early reckless marriages were offences almost as great. In his own part of London it almost made his blood run cold to think of the many early marriages. Sometimes he heard in Lambeth Church on a Sunday morning the lists read out of asking So-and-so, and there was an enormous number of minors, who did not think it any harm, with no means in the world, to set up, and begin to bring a family into the world. Self-restraint was the road which governed both kinds of intemperance," &c.

I the more readily quote this excellent observation made by the Primate, as it is of equal value here in this Colony, where "self-restraint" from all intemperate and vain pleasures is so greatly needed, and where, I fear, those "early reckless marriages" are also too often made.

If the question were to be put to me,—which has been not unfrequently asked of aged persons who had seen a little more than usual of life, on their reaching the confines between the two worlds in full possession of their faculties, and with the illimitable full in view,— "What I considered the very best thing for man?" Speaking from experience I should reply, "*Love of Work*." Work, employment, whether mental or physical; or better still (where such can be) both; both combined as it were in a pair, arid so helping one another. And here, please, note, I do not dogmatically lay down what kind of work is to be followed: No; I would, I must, leave that entirely to the idiosyncrasy of the individual. Take up and follow that to which you are more naturally inclined, only let it be work,—real application; endeavour to master it. It is said of the Prince of Wales, that on one occasion, in speaking in public, he said,— "Whatever is worth doing is worth doing well." And it is also recorded of John Wesley, that he had said,— "If I were a shoemaker, I would try to become the best shoemaker in the parish." But no doubt, both these sayings, or the truisms inculcated by them, are not original. Knowledge is really happiness; a man who has a fair share would not give it up for anything he could see; and it is admirably fitted to supply satisfaction to those powers of the mind which otherwise have a tendency to drift into mischief. Here, methinks, the words of one of our esteemed British bards are very applicable:—

—For "it has peace, and much secures the mind
From all assaults of evil, proving still
A faithful barrier, not o'erleap'd with ease
By vicious custom, raging uncontroll'd

Abroad, and desolating public life."
—COWPER: *Task*, b. iii.

That, also, is a delightful little poem of our British poet *Byrd*,—made in 1588, (300 years ago,)—beginning with,

"My mind to me a kingdom is."—

—This I have often repeated aloud, with much depth of thankful feelings, when alone (yet *not* alone!) in the deep recesses of our ancient forests—surrounded by the manifold and wondrous beauties of Nature.

Moreover, scientific processes also gratify our love of novelty, of wonder;—all have an insatiable appetite for the wonderful; civilized man is still, everywhere like the Athenians of old, eagerly enquiring after "some new thing." And to a certain extent (if, indeed, such should ever be limited,) this common trait is conducive of great good, as, in spite of many failures, it continually leads to the advancement of our race.

When Dr. Johnson was once asked, "What books he would select for a boy's reading?" He replied, "I would let him go into a well-stored library and select for himself." That was good: but, please remember, a library in those days and a library now, (that is, say, such as this Public one here in this building of the Athenæum!) are two widely different things. At that time, light reading, novels and romances were very few indeed; they may be counted on one's fingers, and were generally of a select class, such as are still called "the British Classics"; whereas now, every common library, every reading room is inundated with them as with a flood— "the very spawn of Nile"; and the depraved modern taste, I regret to say, goes madly after them, and too frequently the very lowest. There is yet another important branch of scientific teaching which I should also like to say a few words on, viz, Technical Science. This of late has come largely to the fore, and very properly assumed a first place at Home; much having been said in its behalf by powerful and talented speakers. Indeed, its absolute necessity is clearly shown, if our British nation is to continue to hold its own among the other civilized states of the world; and this, as I view it, is a fair fruit of the National Exhibitions of the last half-century, one of which is now about to be held in Melbourne, and if such teaching is needed at Home, it is still more needed here in this new country. I have very lately been reading in "General Gordon's letters to his Sister," and among them is a short one bearing, and that quaintly yet truly, on this subject; a portion of it I extract, as I fully support it, having myself had to do in this

country, some 40-54 years ago, many of those very things so feelingly mentioned by Gordon; and which, at first, I felt very stupid about: but *patientia docet.* Gordon says

"If I had sons I certainly would teach them a little of most trades—amongst others, bootmaking. You have no idea how feeble one feels not knowing these things. People in our position of life must see the time has gone past for sinecure posts; that their sons, or grandsons, at any rate, must be prepared for the Colonies. What a number of useless boys there are, who cannot even write a good hand (I can't, I know). I had a signal failure with my repairs on my boots to-day. A little carpentering, black- and tinsmithing, shoemaking, and tailoring, would be a real gift to a young man; he would be prouder of himself, feeling, 'Let the worst come to the worst, I am not useless."[7] I declare I feel for the poor little chaps of the future, if we give the A B C education we do now. Large schools are, to most boys, not an advantage, but the reverse. What earthly use will the Latin, Greek, or Algebra be to thousands who have learnt, and probably, forgotten, them. Looking at many one knows, they never need have learnt more than reading, writing, arithmetic, history, and geography. A disastrous war would close the Army, except to strong men who were soldiers only. It seems cowardly to say it, but I am glad I was born when I was. I imagine six months would give a boy a good insight into all trades, sufficient to let him carry on any one with ease if he chose to pursue it in after years."

Here I will also quote a few highly suitable sentences on this subject from an oration delivered by Professor Tyndall, at his banquet (of which, more further on);—he said:—

"I was called on to deliver a series of lectures on scientific education. I then referred with serious emphasis to the workers in our coal mines, and to the terrible perils of their occupation. I pointed to the intellectual Samsons toiling with closed eyes in the mills and forges of Manchester and Birmingham; and I said,— 'Give these toilers sight by the teachings of Science, and you diminish the causes of calamity, multiply the chances of discovery, and widen the prospect of national advancement,' Thus early, you will see, I was alive to the importance of technical Education, and I am no less alive to it now." &c., &c.

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7 *WC:* This practical remark of Gordon's reminds me of an ancient Maori proverb:—"*He kai kei aku ringaringa*": meaning, I can earn my livelihood by my own hands—my own exertions or industry, Lit., I have food in my bands—or, in the use of my hands. The proud saying of an industrious people; the very opposite of an idle person and "loafer."

Since writing the foregoing,[8] I have been reading the Rectorial Address lately delivered by Mr Goschen as Lord Rector of Aberdeen University to the students there; and I have been both struck by and pleased with it. And it seems so beneficial and suitable to the present time, (both here as well as there,) and also so much in unison with my own observations I have just given to you, that I extract a small portion of it. Mr. Goschen said

"He wished to plead, not for any particular branch of knowledge, but for a temper, an intellectual habit, an attitude of mind, which was applicable to every kind of study, and, indeed, to every sort of work—the habit of intellectual interest in all that was studied, learned, or done. Without intellectual interest no study, no profession, no business could be satisfactorily carried on, Intellectual interest sprang from the work itself, and was born of doing it, and was not the interest of success, rivalry, profit, or duty."

Having spoken approvingly of the devotedness of many engaged in the professions of Law and of Medicine; he went on to say

"It might be said that these were learned professions.... His contention was that the same truth held good with regard to callings which were commonly considered the least intellectual. He would take an illustration from a very prominent controversy of the present day. Many of our commercial cities were at this moment terribly exercised by the fact that foreigners are ousting Englishmen in our counting-houses at home, and in the competition for new trades abroad, German clerks, it was said, were invading every business house in London, and depriving Englishmen of their bread; and the reason was said to be their greater knowledge, their command of foreign languages, their acquaintance with all the technicalities of their business, and the excellence of their Commercial Schools. Conferences had been held to consider the cause of English failure, and remedies had been suggested in plenty to meet an admitted danger. Foreign languages were to be more and more introduced into our Educational system. English clerks were to have a special business training; higher commercial schools were to be founded to produce an article capable of competing with the foreign importation. He would not throw one drop of cold water on any one of these projects, all of which had evidently become necessary and all of which should be pushed with ardour and enthusiasm. But when they had done all this,—had taught the English clerk five languages, had instructed him in the technicalities of his business, they would not have done enough unless they had succeeded in making him as fond of his work as his

8 *WC:* This Paper was mainly written while at Dannevirke, in May, confined to house through rain; hence, this, from Mr Goschen's Address, was extracted and added after my return to Napier, in June.

German competitor (hear, hear). There was a danger in thinking that it was only knowledge that was lacking, that it was only in width of information that the foreigner was superior. He knew more, no doubt; but that was not the root of the matter. The root of the matter was, that he cared more about his work; that, as a rule, he took an interest in it apart from its results in money; which, for whatever reason, the Englishman had not hitherto learned sufficiently to take. Of course he was speaking in very general terms; but he pointed to the admitted fact, that it was characteristic of the German clerk that his work presented to him a field which excited his interest and filled him with an ambition for wider knowledge, which was not to be despised because its subject seemed dull and dry. The man who, however instructed, mentally swore at the work to which he was condemned, who regarded it as drudgery to be done from necessity or from a sense of duty; but to be got over as soon as possible and forgotten, was at a disadvantage in competing with the man to whom that work was constantly suggesting topics of interest, and to whom it was therefore not a drudgery but a pleasure (hear, hear). He had seen German clerks listening to some discussion on a complicated question of commercial law, not with the bored faces of men who kept their eye upon the clock, anxious only to know when the hour of release would strike, but with the keen interest of experts who delighted in the analysis of an intellectual problem. Such interest could not be explained away by putting it down to the mere instinct of money-grubbing. No thought of salary was present to the minds of those salaried men. Over such discussion the dinner-hour would be forgotten.... He hoped his hearers would not misunderstand him: he was analysing a type of character, not holding up an ideal. From a different point of view the English clerk would be the more attractive man. In loyal devotion to the interests of his employers, he had certainly no superior. He had natural quickness, he had energy when called upon for special duty. He had many interests beyond the counting-house or the warehouse, and if, when the hour of his release had come, he hurried off to ride his bicycle, or to strip for the river, or to carry his bag to some suburban cricket-field, or made his way quickly to his wife and children at home—who should say one word of blame? But, as a man of business, the rival to whom his work was not a mere task, who got rid of it with less alacrity, who found pleasure in it as well as outside it, would beat him in the race."

—(London, "Standard," Feb. 1, 1888.)

Before that I conclude this part of my Address I would also remark, (having had a hand in forming this Society, and in drawing-up our Constitution and Rules,) that if I had to begin again, I would certainly seek to have at least one other additional rule added to our present number, viz.,—that every Member should contribute annually at least one original Paper, or five good specimens to the Museum, or two suitable books to the Library. Indeed, and for my part, (speaking

experimentally, as long being the Honorary Secretary and Treasurer of this Society,) I would much rather receive an original Paper from a Member than his guinea annual subscription,—but better still both.

No doubt Members will have noticed with much satisfaction, the large number of specimens both Natural and Artificial that have been added to the Museum of the Society during the past year. Time will not permit of my speaking of them particularly, and there is the less need of my doing so, as they are all here present, more or less patent, to speak for themselves. I would, however, say a few words of congratulation respecting the discovery of such a large number of valuable Moa bones in this almost immediate District; nothing approaching this had hitherto been met with in the North Island. These as you know, were all obtained by our zealous Curator[9] from one spot near Patangata, all more or less huddled together; and of them, I dare say, he will give a full and particular account during the Session.

Such a very large and unexpected accession of varied specimens, as mentioned in the Report, many of them, too, being very valuable, naturally leads me to remark on our great want of room for displaying them to advantage, as well as their insecurity from fire. This subject has been touched on by the late Council in their Report,—I was going to say, almost ironically! I wish I could see an early remedy for this,—or even a future one: but I must confess, I do not. And I, for my part, feel this perhaps the more keenly, knowing, as 1 do, that things might have been different with our Society in this respect, had it not been for the waywardness or shortsightedness (to give it no worse name) of the officebearers for the time being of tile Athenæum, (under whose controul was this building and its adjacent grounds,) who opposed what then might have been usefully and beneficially accomplished. I much fear that such a chance may not again happen.

And here, bearing in mind our already confined and over crowded room, and our scanty and uncertain monetary resources, and our present unpleasant state of finance,—I would remark, that it may be found advisable strictly to limit all future outlay in the procuring of specimens for the Museum to those of the Colony only, especially those of the old Maoris, to which may be added the genuine artificial productions of ancient Polynesia generally; leaving the Natural History specimens, including those of this Country, (especially of the animal

9 *Ed:* Augustus Hamilton.

kingdom,) which are much more common and always more easily obtainable, to a future and more prosperous time.

I should like to take a rapid glance of the principal achievements of Science during the past year, and to lay them before you; but such would prove a hopeless task, even if I had attempted it at the beginning of my address, and confined myself solely to it. For while she has been as busy as ever, and very many things heretofore hidden have been made known, and utilized, and perfected, still the year 1887 has not been noted for any remarkable or great discovery. But, in so saying, I must not forget that the past year was the marked Jubilee Year of our most gracious Queen. And here I cannot do better than to quote from a most excellent lucid and learned scientific oration, delivered by Professor Tyndall, at the complimentary dinner given on his retirement from the Chair of Natural Philosophy at the Royal Institution; the President of the Royal Society in the Chair. Professor Tyndall, after premising that this was the Jubilee Year, and asking, what would be a handsome Jubilee present to offer the Queen, went on to say

"It would be a handsome Jubilee present, if it were possible to roll up the career of Faraday into portable form and to offer it to the Queen as the achievement of one of her Majesty's devoted subjects during her own reign. But passing beyond the limitations of the individual, what was Science, as a whole, able to offer on the golden wedding of the Queen with her people? A present of the principle of gravitation—a handing over to her Majesty of the bit and bridle whereby the compelling intellect of Newton brought the solar system under the yoke of physical laws—would surely be a handsome offering (loud cheers). He mentioned this case of known and conspicuous grandeur, in order to fix the value of another generalisation which the science of her reign could proudly offer to the Queen, quite fit to take rank with the principle of gravitation—more momentous if that were possible— was that law of Conservation which combined the energies of the material universe into an organic whole—that law which enables the eye of Science to follow the flying shuttles of the universal power, as it weaved what the Earth Spirit in Faust called "the living garment of God" (cheers). This, then, was the largest flower of the garland which the Science of the last fifty years was able to offer to the Queen. The second generalisation was like unto the first in point of importance, though very unlike as regards its reception by the world. For, whereas the principle of Conservation, with all its far-reaching, and from some points of view, tremendous implications, slid quietly into acceptance, its successor evoked the thunder-peals which it was said always accompany the marriage of thought and fact. For a long time the scent of danger was in the air. But the evil odour had passed away; the air was fresher than before; it filled our lungs and purified our

blood, and Science, in its Jubilee offering to the Queen, was able to add to the law of Conservation the principle of Evolution."—

During the past year much has not been done in the way of fresh geographical discovery. The unexplored portions of the globe are becoming so rapidly contracted that we can scarcely reasonably expect great discoveries from the modern traveller. Central Asia and Africa however, are still the scenes of various geographical labours. Little has been done in high Northern latitudes; but our knowledge of the Siberian islands has been considerably increased; and the Antarctic regions are again coming to the fore, and claiming notice; though I, for my part, bearing in mind the former Expeditions, both American and English, of nearly half-a-century ago, (having, also, myself, visited the ships when at anchor in the Bay of Islands, and made the acquaintance of their officers,) I have not any high opinion, or expectations of discovery in that direction.

The past year, however, was fruitful in additions to our previous knowledge of the planetary bodies, the former total of 260 being increased to 271. The Solar Eclipse of August 19th, owing to bad weather, yielded poor and scanty results, which, I believe, are still unsettled; and the results of the transit of Venus in 1882 are only lately published; they give a value for the solar parallax corresponding to a distance from the earth of 92,560,000 miles. Several new variable stars have also been discovered; and about 21 which Flamsteed described, but which Bailey, being unable to identify them, imagined to have disappeared from the heavens, have now been identified by Peters. Probably it will be admitted that one of the most striking scientific events of the year has been the announcement by the well-known astronomer Mr. Norman Lockyer of his meteoric theory of the structure of the universe. Whether it will supersede the nebular hypothesis, which has held the field so long, remains to he seen. Mr. Lockyer's theory displaces the nebula from its position of cosmical parent, and gives that honour to the meteorite. It is only recently that astronomers have arrived at an approximate idea of the enormous number of these wandering bodies, and it is obvious that they play a much more important part than was at first supposed. His theory has the merit of simplicity, and it would seem to offer a reasonable explanation for many of the phenomena of the universe. Whether it will hold its ground in the light of subsequent research, or whether it will fall into the limbo of untenable and exploded hypotheses, time

alone can shew. The photographing of the sky by International arrangement is proceeding apace, and when completed will prove to be a most valuable acquisition. Photography has not yet solved the problem of "taking pictures in colours," although the announcement of it has again been made. The Astronomical Congress at Paris was a noteworthy scientific event of the past year, leading as it did to more organized action in searching the heavens among astronomers in all parts of the world. Ignorant people have been very much excited, and have written much nonsense, because Venus has been appearing as a morning star with more than her usual splendour. There has been much foolish talk about the "Star of Bethlehem" in connexion therewith, showing how much remains to be done before even the most elementary knowledge of common things become generally diffused. There is yet another fact gleaned from Meteorology I should also like to mention; as I think it will be found to bear upon what we have often of late years found to be the case here, and that, too, increasingly—I mean the cause of drought. Hitherto the theory of Wells, that dew is condensed out of the air near the surface of the earth has been universally received; but, after an extensive series of experiments and observations, Aitken has arrived at the conclusion, that it comes out of the ground: a theory, however, which is not quite new, as it had been already indicated.

In Chemistry the event that has interested the public most during the year has, no doubt, been the synthesis of glucose (the manufacture of the principle of grape sugar) by Fischer and Tafel. A great deal has been done in synthetic chemistry during recent years, and people have been fearful enough to prophesy the ruin of the sugar industry all over the world. There is little danger of that, even if the new substance could be manufactured in sufficient quantity; for whatever purposes it may he used, we are likely to go on sweetening our tea and coffee with the produce of the cane or beet. Saccharin (as this new substance is called), is from 180 to 300 times sweeter than sugar, and is now being made on a commercial scale from Coal Tar; its present advertised retail price is 5/- an ounce, and for medical purposes it is very valuable. A natural poison, named Tyro-toxicon, producing nausea, vomiting, and purging, has also been obtained by Mr. Vaughan from cheese and ice-cream; and while the knowledge of this produces a kind of fear, it may also prove. salutary in more ways than one. Microbes—of various names, and of almost as varied direful import—are still the subject of

research; Dr. Klein affirms, that he has discovered the germs of Scarlet fever in the *Micrococcus scarlatinæ* of diseased milk; and then there is the bacillus of Cancer, of which so very much has lately been said in the telegrams and papers of the day. It is, however, more agreeable to have to note, that a Bavarian chemist has confirmed the experiments of Crookes, Odling, and Tidy, in which they found that disease-producing microbes quickly perish in water, so that the danger from that source is not so great as was at one time believed.

In Physiographical Science, one or two things may be noticed, though their causes are still obscure. One is, that the curious Seiches, or oscillations, of lakes, hitherto noticed in Switzerland, are now recorded from Lake George in New South Wales. Another is, that of Earthquakes, (which we here in this country know a little of,) their causes seem to differ in different places, though, as a general rule, the contraction of the earth's crust to accommodate itself to the shrinking of the nucleus on which it rests, is said to afford the most reasonable explanation of its tremors. Thousands of new fossils are constantly being disinterred all over the globe, all interesting and none of them (as far as I know) yet affording any facts against the current views; our local and colonial Geologists contributing their fair share to those discoveries.

In Botany, Zoology, and general Biology much work has been done, all tending towards filling-up the links still wanting in the one great chain of Nature; of which (and of Botany in particular) more anon.— In General Physics there is not a great deal of novelty to note. The applications of Electricity are increasing, and it is said, that before long there will be Telephonic connection between London and Paris, it being now possible to send speech through water. As an apt illustration of the power of Knowledge the Telegraph wires stand pre-eminent, along which unheard and unseen conversations are going-on! The Phonograph is being utilized by the "phonograms" of a conversation; that is, the little sheets of foil on which the records of the sounds received have been imprinted, these are put back into the apparatus, and the *ipsissima verba* and tones of a conversation reproduced as often as may be necessary. These phonograms are practically indestructible, and may be sent by post as easily and as cheaply as a letter.

Electricity being one of the most prominent (if not the very prominent one) of our useful modern scientific discoveries,— under its

present beneficial threefold aspects of Telegraphy, Telephony, and Electric Light, are now in use in this town, (with more excellent uses of this potent power yet to come!) I will just quote a few words from the conclusion of the very interesting inaugural Address of the President of the Society of Telegraph Engineers and Electricians, Mr. Edward Graves, the Engineer in Chief to the London General Post-Office, at a Meeting held at the Institution of Civil Engineers, Westminster, in the early part of this year (1888). He, naturally, selected Electricity for the subject of his discourse, and enumerated the various directions in which the electric force is utilised, such as Telegraphy, Telephony, and Electric Lighting. He said

"They had a grand total of 42,368 persons engaged in this country in industries relating directly to electricity. Adding to these the individuals that could not be classified, who must amount in the aggregate to at least an equal number, they arrived at a total approaching 100,000 persons, in round numbers. The employment of 100,000 persons meant the support of at least 800,000 of the community. If these figures represented even an approach to the truth, it was evident that throughout the earth there must be 5,000,000 of people, at least, who would have to seek for other means of subsistence if electricity and its commercial applications had not been made known to man. Thus it was evident that a double blessing had been conferred by the discovery of its potent force—a blessing to the inhabitants of the world at large, who profited by its operations, and a further blessing to the toiling myriads whose field of labour lay in carrying them out"

And now another novel discovery in Electricity is reported, viz., that of purifying London Sewage. The plan has been devised by Mr. W. Webster, F.C.S., and a long and interesting account of it has been given, from which it appears, that a current of electricity, produced either from cells or from a dynamo, is sent into the sewage, the transmission being effected through metallic electrodes; and thus the chemicals required are created in the sewage itself by the action of the electric current on the electrodes and the sewage, and the effect is curious and prompt, Mr. Webster has already carried out his plan, which he has patented, beyond the bounds of his laboratory.—

I have already alluded to Botany (my favourite Natural Science,) with a remark that I should return to it; I now do so, with great pleasure, as I wish to call your particular attention to the very high honour lately done to our chief New Zealand Botanist (for such I may truly style him) Sir Joseph Dalton Hooker, whose descriptions of New Zealand plants,

also of the plants of Tasmania, Cape Horn, Fuegia, the Falklands, and the furthest Antarctic Islets, collected, too, by himself, together with his celebrated writings on Southern Botany in general, are on our Library shelves, and are well-known to many of you. Sir J.D. Hooker, then a very young man, was the Botanist and Naturalist, (and assistant Surgeon) of Sir J. Ross' Antarctic Expedition, already mentioned by me. The Royal Society held their anniversary meeting at the close of the last year in their apartments in Burlington House, London, when the anniversary address was delivered by the President, Professor G.G. Stokes, M.P., from which I must be permitted to give you a rather long but very interesting very satisfactory extract; and I do this the more readily, believing in the truth of the ancient saying or fable,[10] with which you I think, will also readily concur. At the opening, the President,—having first feelingly mentioned the decease of one of their Fellows, another of our New Zealand Scientists, Sir Julius von Haast, (a member of the New Zealand Institute, and well-known to many of us,) he having been "so lately among them in London, apparently in full vigour, and now this distinguished Geologist and Naturalist is no more!"—informed the Fellows, that

"the Copley medal[11] for the year has been awarded to the eminent Botanist, your former President, Sir Joseph Dalton Hooker, K.C.S.I. It is impossible, within the limits to which I must confine myself on the present occasion, to do more than briefly refer to some of the more salient features of his scientific career, extending as it does over nearly half-a-century of unceasing intellectual activity; and I need hardly say that in attempting to give some idea of important labours which lie outside my own studies I am dependent on the kindness of scientific friends. As a traveller he can, perhaps, only compare with Humboldt in the extent to which he has used travel as an instrument of research. To quote a remark by Professor Asa Gray, "No Botanist of the present century, perhaps of any time, has seen more of the earth's vegetation under natural conditions." His Antarctic voyage in 1889-48 supplied the material for a series of well-known works of first-rate importance on the vegetation of the southern hemisphere; and these, in their turn, formed the

10 *WC:* I allude to the fable of "the body and its members," in the story of Menenius Agrippa and the revolting plebeians of Rome, as related by Livy, *lib*. ii., c. 32.

11 *WC:* This gold medal is the highest prize annually awarded by the Royal Society. When (sixtythree years ago) the Copley medal was awarded to Arago, Sir H. Davy, the President, in presenting it, said, that "Science, like that Nature to which it belongs, is neither limited by time nor space. It belongs to the world, and is of no country and no age."

basis of important general discussions. The journey to India in 1847–51 yielded, in the Himalayan journals, as Humboldt has remarked, "a perfect treasure of important observations." The maps made of the passes into Tibet are even still unsuperseded. The fine work on the "Sikkim Rhododendrons" was at once a revelation to the botanist and to the horticulturist. His account of the glacial phenomena of the Himalayas supplied facts both to Darwin and to Lyell. A journey to Morocco in 1871, and a later visit to North America, led to important conclusions on plant distribution. Perhaps Sir Joseph Hooker's most important place in scientific history will be found in the rational basis upon which he placed geographical botany. De Candolle, while admitting the continuity of existing floras with those preceding them in time, still adhered in principle to the multiple origin of species. To quote a remark by Professor Asa Gray— "De Candolle's great work closed one epoch in the history of the subject, and Hooker's name is the first that appeals in the ensuing one." According to Lyell, "the abandonment of the old received doctrine of the 'immutability of species' was accelerated in England by the appearance in 1859 of Dr. Hooker's 'Essay on the Flora of Australia.'" This essay effected a revolution. It was quickly followed in 1860, by the classical essay on the "Distribution of Arctic plants;" and in 1866, by the Nottingham lecture on insular floras. The fact of widely dissevered localities for species, which De Candolle found an insuperable obstacle to abandoning the doctrine of multiple origin, has, in the hands of Hooker and A. Gray (as stated by Bentham), afforded the most convincing proof of the genetic relationship of the floras of which such species are components. In systematic botany Hooker has, perhaps, no rival since Robert Brown. "The Genera Plantarum," the joint work of himself and his friend Bentham, and the "Flora Indica," to the completion of which our colleague is devoting the leisure of a well-earned retirement, form only as it were the head of an immense body of taxonomic memoirs. Nor have his services to botanical science been confined to geographical botany and to taxonomy. His researches on various groups, such as Welwitschia and others, deal in a masterly way with morphological problems of the highest interest and of extreme difficulty, While no one would attempt to minimize the commanding and unique position of Mr. Darwin, the scientific historian of the future will recognize how much the development of the modem theory of Evolution, from its first conception in the mind of Mr. Darwin, was facilitated by the interaction upon one another of the work and minds of Darwin, Hooker, and Lyell. It was due to the earnest efforts of his two friends that Mr. Darwin was induced to publish the first sketch of the Origin of Species at all. And no one, had he been alive, would have more cordially recognized than Mr. Darwin, how vast an armoury of facts the wide botanical experience of Hooker constantly placed at his disposal in fortifying and supporting his main position."—

I can assure you, Ladies and Gentlemen, it was with the utmost possible pleasurable feelings that I read the able address of Professor Stokes, containing those words I have extracted for you, while away up in the forests, surrounded as I then was with Nature's living Botanical children;—those very trees and shrubs, Ferns and Mosses of Hooker's own classifying and naming, describing and drawing. All, I fancied, joining in expressive though mute unison with my feelings, and so invigorating me, causing me to drink in the more deeply from the spirit of the woodland scenes. Moreover: on my return to Napier, all that was renewed on my finding here the one thing wanting to fully complete my joy, viz., the reply of Sir J.D. Hooker on that memorable occasion; this had been privately printed and a copy kindly sent out to me. From his plain and feeling and hearty response I will now give you the last paragraph in Sir Joseph's own words; which are worthy of the man, and go far to support much of what I have this night read to you in the early part of my Address.—

"Mr. President, I have exceeded all bounds already; but if I may be allowed a few minutes longer, I would, taking advantage of the patriarchal age which your Treasurer has assigned to me, say a few words for the encouragement of the younger scientific men here present. A septuagenarian may indulge in introspection; indeed it comes natural to him to do so; and when I heard of the award of the Copley Medal to me I could not but ask myself to what quality or exceptional condition of mind I could attribute it, that I had attained to so unique an honour. Heredity, early training, advantages, opportunities, experiences, and even research itself are fruitless, *if there is not some inward motive power to compel us to exercise our faculties, and some inward heat, some fervour, to ripen the fruits of our labours.*—I can truly say that I am conscious of no genius, exceptional powers, or talent; but I have a talent, and it is one that is possessed by every one in this room, and by many I hope in greater measure than I possess it. It is not talent in the modern meaning of the word, but in the old French meaning of wish or will; and I cannot better express the sense in which I possess it, and you all possess it, than in the words of a very modest motto adopted for his rule in life, by a very great man, who died four hundred years ago—Prince Henry of Portugal, the Father of Navigation and Patron of Navigators, who chose for his motto '*Talent de bien faire*,'— 'the wish to do well.' *To such as have this wish, and will use it with all their might, even a Copley Medal is attainable.*"

Here I may, also, briefly mention what some of our members, zealous naturalists, have done during the past year, in again collecting more of our New Zealand novelties from distant and little-known parts

in the interior,—as from Mount Tongariro, Ruatahuna, and elsewhere; descriptions of many of these, will, I trust, be found in this year's annual volume of the New Zealand Institute "Transactions."

There are several other important subjects I should much like to touch upon, but time presses. One, however, I must select and say a few words on, as a branch of it I am (or, may I say? we are) particularly interested in,—I mean the subject of Philology; and the one branch in particular the great Polynesian one. Here we have a language,—or shall I more correctly say, the remains or debris of one?—that extends over one-tenth of the whole globe! A pure (i.e. simple, unmixed,) indigenous islands language, grammatically spoken in numerous dialects, yet all originally springing from one root.[12] If we look around us here in this very room, we shall see much of food for the thoughtful mind concerning the ancient aboriginal inhabitants of this and other Polynesian Islands, showing what those people once were; although we, through force of circumstances beyond our controul, have only come in late as it were, for the very rejectamenta— the scraps and leavings of the great feast. But while these mute objects tell their dumb tale, what of the language, the noble euphonious language of this ancient people?

Situated as we are here in New Zealand—in Maori-land, what have we done to conserve their language? or to preserve those fast fleeting relics of the past? Of all the British Colonies in the South Sea, this one was the one pre-eminently fitted for this work; I might truly say, called to do it; or, in still stronger and plainer language, that such a work devolved upon her as a duty, which she could neither shirk nor delay;— seeing the enormous and valuable transactions which have been, and are still daily taking place, between the colonists speaking only their

12 *WC:* "It is an astonishing fact, and one worthy of close attention from future philologists, that the Polynesian language, of which the Maori or New Zealand is a branch dialect, is commonly spoken by people scattered over one-tenth of the whole globe! Throughout an Island area, containing 80 degrees of latitude and 70 degrees of longitude,—from the South Island of the New Zealand group, in 47° S latitude, to the North Island in the Sandwich Group, in 22° N latitude, and from the West Coast of New Zealand, in long. 167° E, to Easter Island in 109° W, is this great Polynesian language spoken.... The Polynesian is, therefore, peculiarly an island language, being nowhere found on the main-land in either the East or West continents; or in any of the larger semi-continental islands of the globe.... Williams of the London Mission, (who spent many years among the islands,) considered the principal dialects as being eight in number—of which this of New Zealand is the principal one."—(Essay on the Maori Races, *Transactions N. Z. Institute*, vol. I. §49: which see, for more interesting information on this same subject.)

English tongue, and the other foreigners (colonists also) each their own national vernacular,—and the aboriginal New-Zealander only speaking Maori! Moreover, to all that has to be added, 1. the great need of skilled educated Interpreters of Maori in our Law and other Courts; and 2. the Maoris, not knowing English, having been admitted into the General Assembly. I suppose you have seen the notice of motion lately given in the Parliament by the Eastern-Maori member, Mr. James Carroll; respecting the necessity of proper educated Interpreters of Maori in the Courts of Justice; and the purging of the present large and "licensed" rank-and-file of those unfitted for that very important and necessary office.[13]

I have long been of opinion, that it would have been much better for the general welfare and advance of the Colony, had a Maori (or, better still, a Polynesian) Chair been created in our New Zealand University, rather than some others which have been established there, and which, hitherto, have been of very little real service. But do not misunderstand me: I would be among the last to decry anything instituted for good among us, especially in connection with Science—with a University and its teachings; but the great utility of such a creation as a Maori Chair cannot be gainsaid; very sure I am that its classes and lectures would have been crowded with willing students and diligent learners, seeking after useful information, in order to carry it into daily practice, beneficial to both races.

I am the more inclined to speak and write now on this subject, from noting what the Indian Government has lately done, in connection with their conquest of Burmah—arising, too, (just as here,) from the sheer necessity of the case,—as between the two races using two different languages,—viz. instituted a Burmese Chair in their College. Had New Zealand ever possessed a truly thoughtful Government, deeply careful for the commonweal, no doubt a Maori or Polynesian Chair would have been long ago established in our New Zealand University.—Is it now too late to begin?

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13 *WC:* To this I may add, that, 25 years ago, (when I was a Member of our Provincial Government, and, also, of the House of Representatives,) I saw so many instances of mis-interpretation, that I took on myself to represent to the Colonial Government of the day, the absolute necessity in the cause of justice of having two Maori Interpreters in all important cases in which Maoris were concerned; one for the Crown and one for the prisoner. And I, also, specially saw his Honor Judge Johnstone (now recently deceased) in Chambers, and brought this matter fully before him; he at that time, being the Supreme Court Judge for these parts.—

Indeed, considering the general bent of the modern Colonial mind, I can only marvel at it not having been long ago demanded—*pro bono publico*. At present, as far as I know, there is not a single school in the whole Colony where the Maori language is taught! though such Instruction has been often sought by individuals. But, alas! such apathy in scientific matters seems to belong to our British nation of modern times, and to be derived, or hereditary among us! Here a remark made by Professor Tyndall, (on the occasion already mentioned by me,) seems so exactly suitable that I cannot resist extracting it. Referring to Science, the Professor said:—

"On the Continent of Europe, Kings had been the nursing-fathers, and Queens the nursing-mothers of Science; while Republican Governments were not a whit behind in the liberality of their subventions to Scientific Education. In England we had nothing of this kind; and to establish an equivalent state of things, we had to appeal, not to the Government, but to the people. They have been roused, by making the most recondite discoveries of science the property of the community at large. And as a result of this stirring of the national pulse—this developement of self-reliance—we saw Schools, Colleges, and Universities now rising in our midst, which promise by and by to rival those of Germany in number and importance."

I trust, that Professor Tyndall's hopes may be fulfilled to the letter.

From information recently received by me from England, I learn, that the new Oriental College at Berlin was opened in October of last year; and, as a matter of course, a very large number of students have matriculated. There are Chinese, Japanese, Hindustani, Arabic, Persian, Turkish, and Swaheli (*i.e.,* South African) Chairs, and besides German professors, natives are attached to most of them. It is also announced that Members of the College will have the preference for all appointments of Government Interpreters.—I may here observe, that among our late public telegrams from England was one informing us of a Chinese professorship having been (at last!) instituted at Oxford.

Having touched on this important subject of Philology, some one of my audience might expect me to say a few words on one of the newest and peculiar novelties of the same,—if, indeed, such may be rightly classed as belonging to it,—I mean, the belauded universal or international language named *Volapük*.[14] Of this novelty I shall say very little, mainly, because I know scarcely anything about it, although I have

14 *WC:* So called from *vola*, gen. of *vol* = world, and *pük*, tongue or language.

seen one of their publications: and though it is making some small noise and way in the world, (as all wondrous or far-fetched novelties are ever likely to do—for a time, at least.)—I do not believe in it myself, and, as at present advised, can scarcely call it a true science; placing it in the same category with Astrology, Alchemy, Phrenology, Homœopathy, Spiritism, &c. Volapük has kept the impure German modified vowels *ä, ö, ü,* the guttural German *ch*, the compound and difficult English *th*, as well as the rough or aspirated *h*;—and I believe its inventor only intended it as a written language. However, I may tell you, that a Volapük Congress was recently held at Munich; their most important proceeding was the establishment of a Volapük Academy; eighteen Academicians were elected, representing the several European States with Asia Minor and North America. A few small Volapük books—such as a Grammar, Dictionary, Handbook, Exercises, &c., have also been published, mostly in America.—

And here, to prevent misconception, I would add,—that while I do not believe in Volapük ever becoming a universal language, yet I do believe in such a language being attainable, and that, as the cycles of time roll on, an international or universal world-language will naturally grow and become established. That language will be the English one: which, largely aided by America, and their and our numerous far-spreading, ever-growing, energetic, English-speaking Colonies, will become the universal tongue. And then, (I hope,) when that has come to pass, the simplifying process—long wanted, of making the writing of our mother-tongue plain and easy and rational, will assuredly and naturally follow, on something like the attempted modern phonetic plan. Volapük, no doubt, is attempting something in the same direction but with these great differences, which alone will prove fatal to its success, viz.—its being artificial, not spoken and acquired only by learning, and forced, as if to succeed "by leaps and bounds"—which Nature abhors: whereas the gradual growth and use of the spoken English tongue is, and will ever be, natural, easy and progressive.—

In conclusion: Ladies and Gentlemen, Members,—have again to thank you for your kind attention during my rather long and somewhat discursive address; which, I fear, may be also considered by some of my audience as being both "dry" and prosy as well a diffuse and far-reaching even unto our Schools, the rising generation, their training, and their pleasures; these, however, contain the germs and roots of the manners and morals and knowledge and actions of our near-future

successors, as well as the proper support and continuance (or the contrary) of this branch of the New Zealand Institute. And the present being the only (if not the last) opportunity I may ever have of addressing you on these important subjects, I have endeavoured to do my best and truest respecting them; even to the largely prolonging my address with quotations from the recent living utterances of leading celebrated scientific and philosophical men at Home on these and kindred matters; always preferring to give their words to my own whenever we happen to think alike. To me it has ever been a very high source of pleasure, to find men at Home and far away agreeing with me in original thoughts on various matters (or, if you please, I with them); but both arriving at the same conclusions independently of each other. Just as in the celebrated instance of the discovery of the planet Neptune, (if I may be allowed to compare small things with great ones,) when two able mathematicians, one French and the other English—Adams and Leverrier, severally and apart worked out the position of the then unknown planet with wonderful exactness. And this feeling has not unfrequently been immensely heightened when I have found (casually or in reading their works, or by correspondence,) that those persons abroad were also men of eminence in their various scientific and philosophical pursuits and therefore entitled to speak *ex cathedra* on those particular matters; while I, here, was scarcely worthy to carry their shoes. Moreover, in my now bringing before you those varied extracts from several recent utterances of celebrated men of science, I trust you will have perceived a consensus of fundamental opinion or agreement (as it were) running through them all; which, also, more or less affects us in this Colony.

Reviewing what I have thought and herein written and read, there is, perhaps, one subject, on which, while I have just touched it very briefly, I may be deemed to have spoken too strongly;—I mean, the inordinate use of tobacco. I would, therefore, add by way of explanation, that it is (and has long been) my firm and growing conviction, that all such early arid extravagant use of tobacco is pernicious in every sense (social and moral) to our young; indeed I deem it—together with the immoderate love of and hankering after costly pleasures and frivolity—to be much more prevalent and far more injurious to the future of this Colony than Drunkenness itself. With the Archbishop of Canterbury (already quoted by me) I firmly agree, when his Grace said,—

"There were no royal roads to either leisure or means. There was only one way by which men could obtain a fair share of God's good things, and that was by the road of diligence, industry, and thrift."

—And so believing, I have spoken.

I now conclude my address in a few expressive and beautiful lines from Thomson.

> "Father of light and life thou *Good supreme*!
> O teach me what is good! teach me *Thyself*!
> Save me from folly, vanity, and vice,
> From every low pursuit! and feed my soul
> With knowledge, conscious peace, and virtue pure;
> Sacred, substantial, never-fading bliss."
>
> (*Winter.*)

ADDENDUM

SINCE the delivery of the foregoing Address I have received from a scientific friend in London a copy of the *Times* of May 25th, containing a most interesting account of the centenary anniversary meeting of the Linnean Society in the Society's Rooms on the previous day; which I think right to bring forward here (as I should have assuredly done in my Address had I received it in time,)—especially as our highly esteemed first New Zealand Botanist, Sir J.D. Hooker, received the Linnean Gold Botanical Medal, and the eminent Zoologist Professor Owen, (so well-known to us all from his celebrated early profound and long-continued work on the famed extinct New Zealand *Moa*,) the Linnean Gold Zoological one.—

I also notice with much pleasure, that among the distinguished company present was our scientific fellow colonist Sir W.L. Buller—personally so well-known to us.

The first business was the election of the King of Sweden as an honorary Member of the Society. (The Prince of Wales having been elected a Member last year.)

After the delivery of the President's annual Address, the principal item on the programme was the pronouncing of *eulogia* on Linnæus, Robert Brown, Charles Darwin, and George Bentham.

The eulogium on Linnæus had been very fittingly prepared by a celebrated scientific Swede—Professor Thöre Fries, the present occupant of the Chair of Botany at Upsal: that on Robert Brown was pronounced by Sir J.D. Hooker: the eulogium on Charles Darwin was pronounced by Professor Flower: and Professor Thistleton-Dyer delivered the eulogy on George Bentham.

On the motion of Professor St. George Mivart, seconded by Mr. Grant Duff, thanks were voted to the Authors of these eulogies.

Then followed the presentation of Linnean Gold Medals to Sir R. Owen as a Zoologist, and Sir J.D. Hooker as a Botanist.

The President explained, that it had been determined to establish a Linnean Gold Medal to be presented in subsequent years alternately to a Botanist and Zoologist but on this occasion two were to be presented and there had not been any question in Council as to who the first recipients were to be. The medal had on one side the portrait of Linnæus, taken from the bust in the room, and on the reverse the arms of the Society with the motto, "*Naturæ discere mores*," surrounded by the *Linnæa borealis*.[15] The President first made the

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15 *WC:* Wishing to make this clear to all readers; I briefly add a few words respecting this plant. Dr. J.F. Gronovius, the friend of Linnæus, in describing it, says:—"This little northern plant long overlooked, depressed, abject, flowering early, Linnæus himself selected as most appropriate to transmit his name to posterity."
Its proper home is in the dry woods throughout Northern Europe; and in N. America and in Canada across the whole N. coast. It is also a native of fir woods in Scotland, in Perthshire, Inverness-shire and Aberdeenshire; but only one station is known of it in England—in Northumberland.
It is a modest delicate and graceful little trailing and spreading small-leaved woody-stemmed plant, forming large green patches. Flower-stems long, erect, always two-flowered. Flowers bell-shaped, fragrant, elegant, drooping, rose-coloured, yellowish within: only one species known.
In the Natural System it belongs to the same natural Order as the Honeysuckle. Here in New Zealand we have only one genus belonging to the same order; a small sweet-smelling forest shrub; rather scarce here, but plentiful in the woods north of Auckland, where it was early discovered by A. Cunningham, and fittingly named by him—*Alseuosmia* = fragrant wood-odour.

presentation to Professor Owen, recounting his distinctions and scientific services, and handed him the medal amid loud cheers.

Professor Owen, who was much affected, expressed his high sense of the honour conferred upon him, and thanked the Fellows for their cordial reception.

The President then made the presentation to Sir J.D. Hooker, recapitulating his services to Science.

Sir J.D. Hooker, who was warmly cheered, returned his cordial thanks to the Council and the Society,— "of which members of his family had been members for three generations."

W. COLENSO

Napier, July, 1888.

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