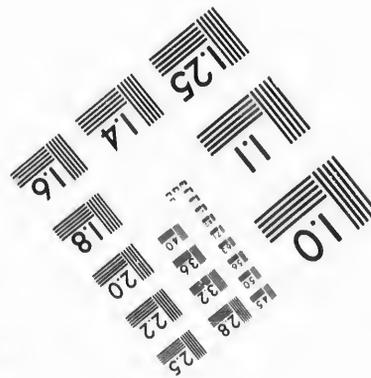
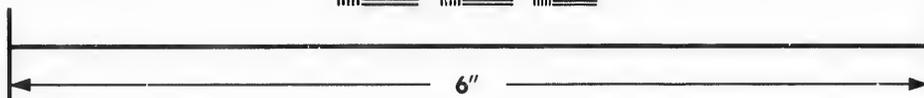
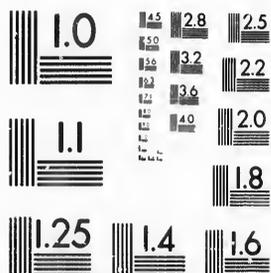


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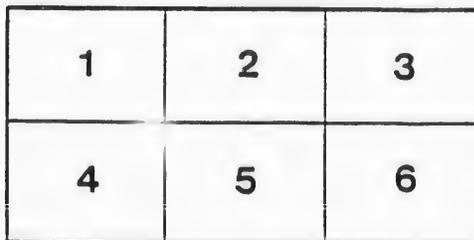
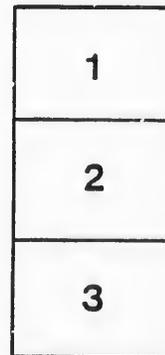
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ORATION

LIVERED AT

THE ENCÆNIA

IN

KING'S COLLEGE, FREDERICTON,

JUNE 27, 1850.

BY

W. B. JACK, A. M.,

Professor of Mathematics and Natural Philosophy.

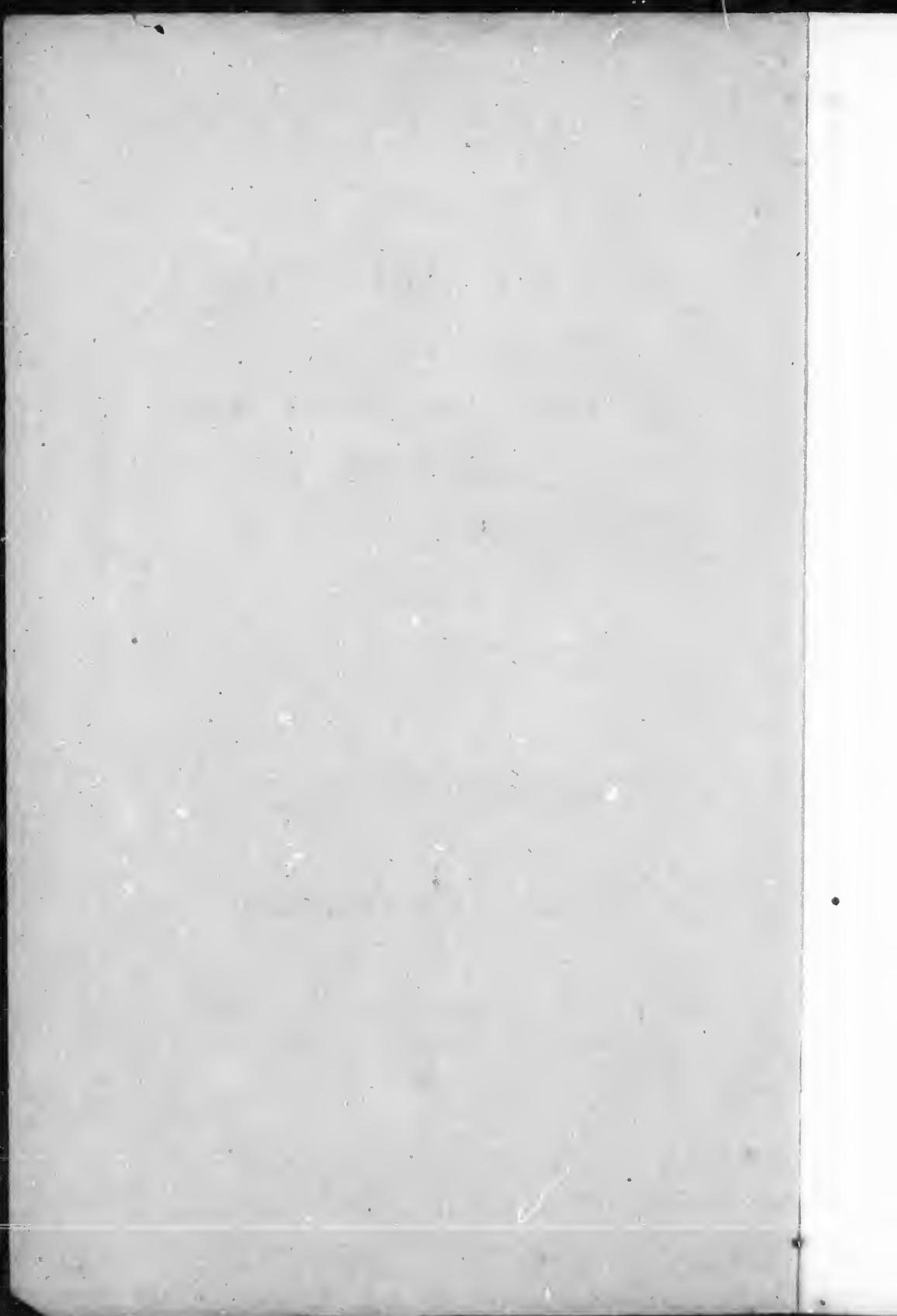
Romæ nutrirî mibi contigit, atque deceri
Iratus Gravis quantum nocuisset Aethiops.
Adjecere bonæ paullo plus eris Aethenæ;
Scilicet ut possem curvo dignoscere rectum
Atque inter silvas Academæ quaerere verum.—Horace.

Published by request of the College Council.

FREDERICTON:

J. SIMPSON, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

1851.



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DELIVERED AT

THE ENCÆNIA

IN

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JUNE 27, 1850,

BY

W. B. JACK, A. M.,

Professor of Mathematics and Natural Philosophy.

Romæ nutrirî mihi contigit, atque doceri
Iratûs Graiis quantum nocuisset Achilles.
Adjecere bonæ paullo plus artis Athenæ;
Scilicet ut possem curvo dignoscere rectum
Atque inter silvas Academi quaerere verum.—*Horace.*

Published by request of the College Council.

FREDERICTON:

J. SIMPSON, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY.

1851.

TO

THE HONORABLE AND RIGHT REVEREND
THE LORD BISHOP OF FREDERICTON,
President of King's College, &c. &c. &c.

THE FOLLOWING

ORATION

IS RESPECTFULLY DEDICATED;

In testimony of the Author's grateful sense of His Lordship's zeal and exertions
in the cause of Education throughout the Province.

ORATION.

May it please Your Lordship, and Gentlemen,

THE duty, which is this day assigned to me, has so often been entrusted to abler hands, that it is with some degree of diffidence I set about its performance. Once a year, for nearly a quarter of a century, the praises of the Founders of King's College, Fredericton, have been made the theme of discourse from this place. The subject, therefore, has lost the charm of novelty, and I cannot pretend to make it attractive by the graces of style. Nevertheless, it has been well ordered that we should hold an annual commemoration of the kind which now calls us together. Such ceremonies are not only in pleasing harmony with our natural feelings, but are well calculated to produce upon the reflective mind the most beneficial results. When Anaxagoras of Clazomene was asked by the Senate of Lampsacus, how they should commemorate his services, he replied, "By ordering that the day of my death be annually kept as a holiday in all the Schools of Lampsacus." Such was the wish of this distinguished Philosopher, who, according to Cicero, relinquished his ample possessions to his friends, and devoted himself wholly to learning and the investigation of truth, and first taught that the arrangement and order of all things were contrived and accomplished by the understanding and power

of an infinite mind. We may suppose that the statute which appoints this commemoration originated in feelings akin to those which prompted the request of Anaxagoras.

To the Founders of this University we owe a debt of gratitude which, year after year, we ought cheerfully to acknowledge, to the end that our hearts may not only be more and more fully impressed with a reverential regard for their memory, but also that we may the more vividly feel our responsibility to promote, by all the means in our power, the good work which they began.

Those whose names are worthily associated with great Seminaries of learning—and I trust that King's College is one day destined to take an honorable place among the number—are of all men the least likely to be forgotten. Generation after generation of talented youths come up to the Institutions which have thus been founded, and go forth again into the world to spread the fame of their inestimable advantages. It cannot be necessary, on the present occasion, to repeat the names of those who zealously promoted and effected the establishment of King's College, as in several former Orations they have been eloquently commended, and shown to be justly entitled to our grateful remembrance.

But if this Institution has had many to praise and appreciate the enlightened views of its Founders, it has not been sufficiently fortunate to escape the abuse of numerous enemies and detractors. These have raised against it a hue and cry, by which it is impossible to say how far its present usefulness has been marred, and its ultimate prosperity endangered. It is, moreover, somewhat discouraging to find, that no sooner is one source of clamor exhausted, than another is eagerly sought for to supply its place. The exclusiveness of the College was long the favourite theme for popular declamation, but when this was removed by making its advantages equally accessible to all, the so-called great expense at which it is supported and the comparatively small number of Students

became the most prominent points for animadversion. The noble exertions of its Founders have certainly secured for it what, considering the circumstances of the country, must undoubtedly be considered a very handsome endowment. To show however that they have not been so singular in their liberality as many would have it believed, and that, even in quarters where the most rigid economy is generally supposed to prevail, the Collegiate system is deemed worthy of being supported at very great cost to the public, I beg to draw your attention to the following statement respecting Harvard University, near Boston—an Institution which is perhaps the most flourishing on the Continent of America, and which can number among its Alumni men of the greatest learning and eminence. According to the Report of the Treasurer, the amount of Funds appropriated to the education of undergraduates is \$467,162.17. The interest of this sum, together with the fees arising from tuition, furnishes the means of supporting the Institution. This interest at six per cent. is \$28,029.72; that is, the College pays out for education this amount more than it receives for tuition. If we divide this sum by the average number of graduates for the last ten years, 57, it will give \$491.01, which is the proportion received by every graduate. In other words, the public or private munificence of this noble Establishment grants a bonus of \$491 to every Student who takes his regular degree. But the above is only a fraction of the money here invested for the purpose of education. The lands, buildings, library, apparatus, museums, and other means of instruction for the benefit of the Student, would probably amount to fully as large a sum as the fund already mentioned. If we add these together, we shall see that every graduate of this Institution, even after leaving out of the account all that he pays for his own education, costs the public at least \$1000. Yet the Treasurer complains of the straitened condition of the University, and does not hesitate to ask for increased liberality on the part of the people. And after all, it may well be asked, whether the cultivation of literature and science in a community, is not worth all this and vastly more? Can money be more wisely expended than in

scattering the seeds of a superior education over the land; in raising the intellectual and scientific character of our public men, and in diffusing abroad amongst us the humanising influences of polite learning?

It may be safely asserted that in all countries, and more especially in new ones, a premium must be paid on the higher branches of education; and who, let me ask, that has the slightest regard for the intellectual standing and honor of our Province would not rather consent to this, than suffer them to fall from the midst of us? The divine inspiration of Solomon tells us that "Wisdom is better than rubies; and all the things that may be desired are not to be compared unto her. I, Wisdom, dwell with prudence, and find out the knowledge of witty inventions. Counsel is mine and sound wisdom; I am understanding, and I have strength. By me kings reign and princes decree justice. I love them that love me, and they that seek me *early* shall find me."

Nevertheless, the hill of knowledge is not attractive to the generality of men, and it, therefore, requires some inducements to lure them to attempt the ascent. The appetites and passions of our physical nature make themselves keenly felt, and need no stimulus to urge us to their gratification. He that is cold and hungry naturally seeks to be warmed and fed. He that is poor and naked longs to be rich and sumptuously adorned. But he that is ignorant does not as a matter of course desire instruction. Indeed the more ignorant he is the less does he relish it, and the less fully is he impressed with its paramount importance both in regard to his own good, and that of the aggregate of society.

The very ample means, which our Provincial authorities granted for the establishment of King's College, showed that they were duly sensible of the value of such an Institution, and of the necessity of fostering and encouraging the spread of sound learning and useful knowledge throughout the country.

Had the same conviction guided the conduct of those who think it praiseworthy to attack the College upon every possible opportunity, and thus damage its popularity, and diminish its usefulness, it would in all probability have now been dispensing more extensively the benefits which their ignorance or malice tends to confine within the narrow limits they are the first to point out and animadvert upon. I am, however, happy to be able to announce that during the academical year, which closes with this day's celebration, the Students in attendance have been considerably more numerous than in the preceding, and that for the next we have the cheering prospect of their being still further augmented.

It has often been argued, and not without some show of reason, that the condition of our Province, which compels her sons to enter early on the theatre of life, and does not admit of a class of merely learned men, warns us to be moderate in our expectations. It is true, that however we may facilitate the acquisition of knowledge, we cannot make men improve themselves and develop their intelligence, unless they devote their time to the purpose. The years of boyhood, almost of early manhood, set apart for the progress and completion of a course of Collegiate studies in England, are generally considered of too much value to the youth of this country to be willingly devoted to such an object. Time is their capital, and they begin as soon as it is possible to turn it to a worldly account, and seldom find leisure to spare either for study or the encouragement of any purely literary pursuit. Let us trust, however, that we will soon see a better state of things, and a more enlightened spirit abroad amongst us,—that as the number of the Alumni of King's College increase, and carry with them to their respective stations throughout the Province that reverence and regard for their Alma Mater, which the happy period spent under her benificent guardianship seldom fails to inspire, they will cause a liberal education to be more generally appreciated and a desire to procure it more widely felt.

As yet both ignorance and apathy prevail among us to an unusual extent. From the Statistics furnished in the American Almanac for 1850, it appears that Massachusetts, with a population not five times as great as we have, has upwards of 700 Students attending her four Colleges:—Connecticut with a population only one half greater than ours has upwards of 500:—the small State of Rhode Island, whose population does not exceed 120,000, can boast of 152 Students receiving instruction at her single University; and to come nearer home, to a State, wherein great disparity of condition cannot be so well urged as an objection to the comparison, Maine which contains about 550,000 inhabitants, can number upwards of 200 Students at the Colleges of Bowdoin and Waterville. The celebrity of several of these seats of learning, and the sectarian character of others, may doubtless attract many Students from quarters beyond the States in which they are respectively placed; but still there will be enough left to convince us that we have great room for improvement in the important matter of education, and that we ought to be ashamed of giving heed to the too prevalent but unfounded and delusive notion that the College is in advance of the country. With the above data to refer to, it would certainly appear that from some cause or other, we have hitherto held learning in small repute; but how much shame and obloquy would attach to us to have it said, that the inhabitants of New Brunswick, after obtaining a College, established on the most liberal basis and at a great expenditure of public money, were found, on trial, to be too unenlightened to appreciate its advantages, and maintain it in satisfactory operation. It is the duty of all, who have the honor and intellectual advancement of the Province at heart, to exert themselves to the utmost to obviate this reproach. Those who are in authority and high in station ought earnestly to strive to diffuse a more general taste for learning, and ought to show both by word and deed that they value its acquisition and wish to increase the number of educated men in the community. The members of the different professions might, with advantage to their own reputation, very

properly require of those desirous of entering their ranks, to make previous preparation, by going through the regular course of education taught in this University; as it may not unreasonably be expected that thus the standard of professional learning would be raised, and its intellectual power increased. Those who have hitherto decried the advantages that a Collegiate education is calculated to confer, and sought every means of bringing it into disrepute, would do well to lay aside their prejudices; and if unhappily they cannot be induced to look upon the College with favor, they might at least treat it with forbearance, in order to give it a fair chance of success. Were it only possible to unite all in a hearty and honest endeavour to promote the usefulness and prosperity of the Institution, we might indulge the hope that the people would soon be brought to regard it with pride and satisfaction, as one of the greatest boons that had been conferred upon them. The University is now open to all who choose to partake of its benefits, and the greater the number that resort to it for that purpose the better. Nothing would rejoice the Professors more than to have their sphere of usefulness extended. It would cheer them in their labours, and inspire them with renewed zeal and energy. Expense* cannot now, with any show of

*The whole amount paid for instruction is the annual Fee of £1 to each Professor. A Room in College is allowed to each Student free of charge; and the Board is 12s. 6d. for each week of residence. The following Table, taken from the American Almanac for 1850, will show that in this University a smaller sum is charged for tuition than in any of the Colleges in New England; and these, as will readily be believed, are much less expensive than the Universities in Great Britain:—

ANNUAL COLLEGE EXPENSES.

NAME.	Instruction.	Room rent and other College expenses.	Total College charges.	Board.	Wood, Light, and Washing.
Bowdoin, - - - -	\$24.00	\$22.00	\$46.00	29 weeks, \$58.50	\$35.00
Dartmouth, - - - -	27.00	13.24	40.24	38 " 57.00	9.00
Harvard, - - - -	75.00	15.00	90.00	40 " 70-90.00	
Williams, - - - -	30.00	9.00	39.00	39 " 65.00	
Amherst, - - - -	33.00	15.00	48.00	40 " 60.00	17.00
Brown, - - - -	40.00	23.00	63.00	39 " 60.00	
Yale, - - - -	33.00	21.00	54.00	40 " 60-90.00	20.00
Wesleyan, - - - -	36.00	11.25	47.25	39 " 58.50	20.00
Hamilton, - - - -	26.00	14.00	40.00	38 " 58.00	
New Jersey, - - - -	50.00	28.14	78.14	40 " 80.00	28.00
Dickinson, - - - -	33.00	14.00	47.00	43 " 75.25	22.75
University of Virginia,	75.00	23.00	98.00	44 " 110.00	20.00
N. Carolina University,	50.00	11.00	61.00	40 " 90.00	20.00
Pennsylvania, - - - -	40.00	12.00	52.00	40 " 100.00	25.00
Western Reserve, - -	30.00	11.00	41.00	42 " 50.00	12.00

reason, be said to stand in the way of obtaining a Collegiate education. In fact, instruction in the various departments is offered at such a low rate, that it may almost be doubted whether the paltry sum demanded, is not likely to engender the idea in this, as in everything else, that what may be procured for so little can scarcely be worth having. But judging that even the great reduction in the amount of fees was not sufficient to attract the desired number of Students, the College Council, with wise liberality, have recently held out other inducements by establishing Scholarships of the value of £15 in each of the County Grammar Schools. They have also re-established two others of the annual value of £25 each, to be competed for within the College:—all of them are tenable for three years. Besides the above-mentioned, there are for the benefit of young men studying for the Church of England in this Province, several Scholarships founded by the Society for the propagation of the Gospel, and placed at the disposal of the Lord Bishop of Fredericton. The Howard Gold Medal of the value of £10 is also awarded every year to the author of the best Essay on such subject as the Chancellor for the time being may be pleased to prescribe.

The system of education established in this University has been so well described on former occasions, and the beneficial influence which such a course of training must have upon the mind of the Student has been so ably pointed out, that it will be unnecessary for me to allude to these matters at present. For the same reason I shall not dwell upon the aids and appliances which the Professors have at command for facilitating their teaching, and illustrating the grand principles of science and art. I cannot, however, resist the temptation of directing your attention more particularly than has hitherto been done, to an Instrument whose great value and importance may justly be considered as entitling it to a lengthened description. I refer to the large refracting Telescope which has now been about a year in the possession of the College. This fine Instrument is from the workshop of Merz and Son of Munich,

who have already sent three others of much larger dimensions to this Continent, and who enjoy a world-wide reputation as manufacturers of glass for optical purposes. The object lens or eye of the Telescope (for it serves this purpose and is more effective in proportion to the greater amount of light it collects) is 7 inches in diameter, and its focal length or distance from its centre to the place in the tube where it forms the image of the heavenly body to which it is directed, is $7\frac{1}{2}$ feet. In order to correct what is called the chromatic aberration, this lens is composed of two lenses, one of crown, the other of flint glass; and it is the great difficulty in procuring discs of the latter sufficiently large and perfect, and at the same time pure and homogeneous in structure, that adds most materially to the cost of the Instrument. There are five different magnifying powers, ranging from 80 to upwards of 400, any one of which may be employed, according to the nature of the object under examination. In using any of the higher powers, the diameter of the field of view is proportionately diminished, and hence to find an object under such circumstances becomes extremely difficult, if not impossible. To remedy this inconvenience, a small Telescope with a large field is attached to the side of the great Refractor, and by this the object is first found and readily placed so as to be visible at the same time through the other. The Telescope is mounted equatorially, that is, the stand and machinery are so constructed and arranged that the Instrument may be fixed at any declination, and then by simply turning it on its polar axis, it will trace the path which is described by a heavenly body in that circle of declination. To ensure greater precision to this movement, which is, of course, apparently accelerated as the magnifying power is increased, it has been found advantageous to employ clock-work. This delicate piece of mechanism is most ingeniously contrived, and the rate at which it drives round the polar axis may, by means of centrifugal balls, be so nicely adjusted to the motion of any celestial body, as to keep it constantly in the field of view, and allow it to be examined there at leisure as if it were actually at rest. The declination circle is one foot in diameter, and is graduated

on silver and can be read off to 10 seconds of arc by means of verniers and two Microscopes. The hour or right ascension circle is 9 inches in diameter, and is also read off by two Microscopes to 4 seconds of time. To make measures on multiple stars or other objects, a position wire micrometer of most beautiful workmanship accompanies the Telescope. A ring micrometer, and a reflecting prism for the convenience of observing at high altitudes, are also provided. From the above description, brief and imperfect as it is, it will be perceived that where the position of a heavenly body is given in right ascension and declination, the Telescope may be directed to it at once, and the clock being brought into action, it can be kept steadily in the centre of the field of view as long as may be desirable, while at the same time the hands of the observer are left free to use the micrometer, and perform upon it any accurate measurements he may wish to obtain. During the past year this noble Instrument has not been so much used as could have been wished. This was owing partly to its position which commanded a view of only a very small portion of the sky, but more to circumstances which I need not particularize. Now, however, an Observatory is being erected for its reception, and I trust to be enabled to keep it in more constant employment:

Here, I may be allowed to mention that to complete the furniture of the Observatory, two things are very much needed—a good transit Instrument and an astronomical Clock. The College has already been so liberal in providing for this department of science, that it would perhaps be unreasonable to expect more from the same source. But is there no other means of supplying the above-mentioned deficiencies? The splendid Refractor at Boston was purchased and a magnificent Observatory erected and furnished by the munificence of private individuals. At Cincinnati, a public subscription accomplished nearly as much; and in New York something of the same kind is now being effected. Are not such examples worthy of our imitation? Is there no one in New Brunswick who has the power and the will to aid us in such an undertaking? The

little that is desired is at least equally commensurate with our resources, and would be instantly provided were we only imbued with the same spirit. It is high time to shake off our indifference and enter the field of action. Surely Astronomy is a science which demands something at our hands. "The Heavens," says the Psalmist, "declare the glory of God, and the firmament showeth his handy-work." From the contemplation of the Heavens we obtain the most exalted ideas of space, time, and eternity, and it is in them that the Sovereign Wisdom most strikingly manifests order and harmony, arrangement and design, majesty and power. By the aid of Astronomy we are enabled to compute the distance, mass and magnitude of the planetary bodies;—to ascertain the figure and geographical details of our own globe, and thus obtain an invariable standard for its weights and measures. It regulates the times, seasons, and proportionate parts of the year, furnishing to history the periods for adjusting its calendar, and giving positive rules for fixing the epochs of its chronology. Navigation owns it as the great and only accurate guide in conducting ships over the trackless ocean, and thereby establishing a correspondence between distant nations. It stands in the first rank among the sciences, and has contributed more than any other to the development of knowledge, carrying along in its progress both Physics and Mathematics, as well as contributing to the advancement of the mechanical arts, and, in this respect, acting as the pioneer of civilization. With such claims upon your regard, may I not express my earnest hope that upon him, who next year addresses you from this place, will devolve the pleasing duty of recording among the benefactors of the College the name of some one of you, whose liberality has supplied us with the above-mentioned Instruments.

Before concluding I would address a few words to the young gentlemen, who, during the last year, have been reaping the advantages afforded by the establishment of this Institution. You ought to consider, that in giving you an opportunity of obtaining a liberal education, God has bestowed upon you a

privilege of high value, which it is your duty to turn to the best account. You may have been wearied with reiterated exhortations to industry, but although numerous examples may be adduced to attest its importance, it is by no means easy to be convinced of the real extent of its power. Nothing valuable can be acquired without effort.

“ Nil sine magno
Vita labore dedit mortalibus.”

“Ply, therefore, your labors, and distrust every other means of success. Above all beware of a treacherous confidence in the advantage of a supposed superiority of talents. These, unsupported by industry, will drop you midway; or perhaps you will not have started when the diligent traveller will have won the race. Be assured that in study, application is the first, the second, and the third virtue,—application, not *per saltum*, not in capricious fits, with ebbs and flows of indolence and exertion. Ardent, indeed, it must be, but uniform and unabating. Those among the Grecian youth who aspired to Olympic crowns, would by no means trust their hopes to the flattering gifts of nature, however lavishly bestowed; but sought to fix their fortune and secure their laurels by long and vigorous preparations for the contest.” Remember that you are the objects of public attention, and that on you are centered the hopes and fears, the wishes and expectations of anxious and affectionate parents. It is in your power to do much honor to this rising Institution,—it is in your power to disgrace it. Look forward to your own destiny in future years, and then resolve to take your stand on the high vantage ground of virtue and unflinching effort, and maintain it manfully. I would beg to remind you that the cultivation of the intellectual faculties, without the sanctifying and controlling influence of religion, has, as is abundantly proved by sad experience, little or no direct tendency to improve the character and purify the heart. Under all circumstances, therefore, strive so to conduct yourselves, as to make it evident that you have not repaired hither to gain knowledge at the expense of correct principles and sober and religious habits. Never forget that there is a higher

and a holier world than the world of ideas or the beautiful world of material forms. This world quickly passeth away, but that is your abiding place. God, in his goodness, has vouchsafed to his intelligent creatures an inexhaustible fund of enjoyment in the contemplation of his wonderful works, but the devout perusal of His word and obedience to its precepts, can alone secure everlasting felicity. The aspects and operations of nature are indeed sublime and magnificent, and well worthy your diligent attention; but to enjoy them aright they must be studied as the exponents of Him who stretched forth the Heavens and laid the foundations of the Earth. An acquaintance with the laws in obedience to which the tides of the ocean rise and fall, and the mighty orbs of the boundless firmament are restrained with unswerving exactitude in their appointed courses; with those by which the winds blow, and the rains and dews of Heaven descend to refresh and fertilize the Earth; with those which determine the movements and composition of Light, and regulate the astonishing powers developed by the application of Heat; with those that control the subtle combinations of Chemistry and the amazing velocities and forces of Electricity; with those whereby the Sun vivifies and paints, and according to which germination and production in the vegetable and animal worlds are so wonderfully maintained:— a knowledge of all these, radiant with beauty as they are, and far exalted above all the objects of sense, can, at the most, afford but a temporary triumph and satisfaction to him who has not taken religion and virtue for his guide. Scientific truth is marvellous, and embellishes the universe with majestic grandeur; but moral and religious truth is divine, and invests it with that celestial light, by which he that directs his steps will regain the lost Paradise. For him a new Heaven and a new Earth have already been created. His home is the Sanctuary of God, the Holy of Holies.

