

A PROFESSOR'S VACATION.

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When Sir William Dawson invited me to deliver this year the "Annual University Lecture" he suggested that I might use for it material collected during my recent visit to Europe. I must confess that I heard the suggestion at first with a slight shock of surprise and a feeling that it was unsuitable, for I certainly had not crossed the Atlantic to do any special university work, not even to collect material for a lecture. I had gone for my own pleasure, to gratify certain tastes and satisfy certain long-cherished aspirations of my own, and although I had collected information that bore upon university work, yet it was not of a kind adapted to a public lecture. The immediate occasion of my visit had, it is true, a university aspect, for I was going to the tercentenary of the University of Dublin as a delegate representing this university; but the university was here simply using the opportunity presented to it by my desire to be present at an epoch so interesting in the history of my Alma Mater. And yet, on reflection, it seemed to me that a general account of my visit might be useful, at any rate, as suggestive of a mode by which greater opportunities and inducements might at some future time be offered to its professors for the acquisition of the most recent additions to knowledge and for original investigation. Certainly, the thought that was most strongly impressed upon my mind at the end of my trip was that those universities in the United States are acting wisely who have made systematic arrangements not only to erable, but to induce, their professors to travel abroad for the purposes I have indicated. When I was in London I was introduced on one occasion to a couple of American professors by a friend, who laughingly told me that a short time previously he had spent an evening at the

rooms of one of these Americans, and found there twenty (not a round number but the exact number) American professors who had assembled to meet two eminent German professors. I was shown the very list of names. The American professor himself told me that he had drawn up another list and found that with a fortnight's notice he could have assembled fifty American professors. I presume that most of these had, like myself, gone to Europe at their own expense, but others may have been sent on special missions by their universities. The sketches I present will best point their own moral.

THE DUBLIN TERCENTENARY,

whose celebration was appointed for the beginning of July, was the original and sole cause of my trans-Atlantic trip. But it fortunately happened that I was enabled, without neglect of duty, to leave in the middle of April, a fortnight before the session ended. It was the gain of this fortnight that enabled me to visit Rome before the unhealthy season, and afterwards to get to Athens before the heat was unendurable. A hasty visit indeed! yet giving intense enjoyment to one who had so long cherished the hope of it. The value of this fortnight may be judged from the fact that I was absolutely driven away from Athens by the heat after a stay of only five days, although I could have spent there an additional week or more as far as the plan of my journey was concerned.

It will be convenient to put what I have to say in connection with the Dublin tercentenary first. There are many ways in which it may be treated. A delegate, from France, has published his account in a French periodical which I have seen, and in it the historical element enters most largely.

I might, of course, do this also while at the same time giving a brief description of the series of meetings and entertainments, which, from the variety of the robes of the representatives of sixty-eight different universities from all parts of the world and from the stateliness of the ceremonies, formed the grandest series of spectacles that I had ever the pleasure to see.

I prefer, however, instead to treat it more directly from the educational point of view and to explain the secret of the high standing of Dublin in this aspect after three centuries of existence. The whole secret consists in the

METHOD OF CHOOSING PROFESSORS AND LECTURERS.

In this method Dublin has succeeded in reconciling the ambition of graduates with the efficiency of the university. First, however, let me draw your attention to the distinction between the meanings of the two terms PROFESSOR and LECTURER. Probably most people would say that a professor is a person who lectures in a university, and would regard the difference between a professor and a lecturer as merely a question of rank or seniority, or tenure of office, or experience, or perhaps knowledge and learning. Unfortunately, this is generally too true in America. There is, nevertheless, a real distinction intended between these two titles. The office of a lecturer is indicated directly by the name. It is the duty of a professor to give lectures also, but the mere delivery of the lectures ought to bear but a small ratio to his whole duty which ought to be that of a student and investigator more than of a lecturer. To put it in other words: both professor and lecturer must be lecturers; both ought to be students. But the professor ought to have much more time for research and less should be required of him in the matter of lectures. It is not easy to find a man qualified to be a professor according to European standards. But when he is found one of the most wasteful uses you can make of him is to overburden him with lectures, except perhaps setting him up for a mark to be shot at. It is probably to some reminiscence of this latter fact that we owe the economical provision in the Canadian

law by which university professors are exempt from military duties even in time of war. It might be said that the law was more thoughtful than the universities, were it not for the fact that it has been a matter of desperate necessity for them, owing to the smallness of their stalls in their struggling infancy, to use their professors as lecturers merely. But the time is coming fast when this must be amended if Canada is to hold its proper place in the world, although, no doubt, it will require some explanation before the general public can understand why the higher salary should be paid for the smaller number of lectures. Quality, however, is often more costly than quantity. The

DUBLIN SYSTEM

is as follows: Most of the teaching work is done not by the Professors of the University, but by the Fellows of Trinity college. Their duties correspond most nearly to those of professors in Canada. It must not be supposed, however, that their salaries are the same. On the contrary, while they begin with a respectable annual sum, they rise with certainty until each of the seven Senior Fellows receives a payment equal to or greater than that given to a Dominion Cabinet minister in Canada. It may be said that science and learning are thought too much of in Ireland. It may be on the other hand that ministers are held too cheap in Canada. The result is that in Dublin the very ablest of the graduates are secured as teachers when they are young and have not entered on other professions. A Fellowship is awarded always according to the result of a competitive examination. It is given to the best man. Testimonials, the value of which is so often very uncertain, are neither asked for nor presented. Even previous standing as an undergraduate or graduate counts for nothing. The examination and that alone is considered. This examination covers several subjects in the departments of literature, science, and mental and moral philosophy. No candidate ever offers himself for examination in all these, but he who takes one department only has no chance. Varied knowledge is absolutely necessary. Weight is given to different subjects in such a way that a successful candidate

must be the best candidate in one subject and have a sound knowledge of others. The specialist who knows a single department only and nothing beyond except what is required of him as a graduate would find it useless to try the examination. This is entirely in accordance with the object of a university as the seat of general culture. The character of the examination is such that continued study for several years (on the average about five) after taking the highest honors at the B.A. examination is necessary to success. How then are candidates induced to remain so many years at the university awaiting what is, after all, a chance; since it is a struggle with competitors? Well, they are given an opportunity for comparing their strength with that of their competitors whenever a vacancy occurs, and they are encouraged to make the trial by the award of high prizes according to the merit exhibited. No one ever expects success at the first trial. There are usually three or four before the Fellowship is attained, and it is intended that it should be so, for thereby the continuous study for several years is secured. Experience has proved that the risk of losing some of the best years of life in a vain competition is not so great as at first sight appears. It has been found that the attainment of certain of the highest distinctions in the undergraduate course is a pretty sure criterion of the possession of the required ability. No one who has not attained these ever thinks of becoming a candidate. And among such men, collected from the different years into what is called the Fellowship class since the addition of one year's study makes addition to knowledge, the senior candidates are generally successful. In my time for I was once a member of the class—the attainment of what is called a Senior Moderatorship in mathematics and physics, together with a University Scholarship in classics, made it almost certain, as shown by the records of the university, that the winner could secure the Fellowship.

The present Provost of the college, Dr. Salmon, one of the ablest of living mathematicians, is a case in point. He had attained the two distinctions named before he became a candidate for Fellowship. So also had the two previous pro-

voets, Dr. Jellett and Dr. Lloyd; both eminent as men of science, they had both been classical scholars. Besides the prizes above mentioned it has been found necessary to establish other stepping stones to Fellowships in the form of what are called "Studentships" tenable for seven years, with a fair annual income and no duties necessarily attached. They are awarded to the most promising candidates at the B.A. examination and correspond most nearly to the Fellowships of Oxford and Cambridge; the name being taken, I think, from Christ Church, Oxford, where those graduates are termed "Students," who in other colleges are termed Fellows. The necessity for these arose from the fact that though on the average there may be one Fellowship vacant every year, yet there have been intervals of three or four years without a vacancy, and then, of course, the candidates used to accept or seek appointments elsewhere.

The Fellows are the lecturers in the university, doing, however, what would be called professorial work on this side of the Atlantic. The Professors are chosen as a rule from among the Fellows, and then they are released from the greater part of the lecturing work in order that they may have more time for original investigation.

But the Fellowship examination cannot possibly cover all the subjects of the university work in arts. Hence there are other professorships to which appointments are made in the same manner as is usual elsewhere.

So much for the Tercentenary. Going back to the

BEGINNING OF THE TRIP,

I left New York in the middle of April for Genoa, crossing in a steamer which, among 150 passengers, had only about half a dozen Canadians. Our American fellow-travellers on board were very agreeable companions, and of the cultured class; and I owe a great deal of the pleasure of the trip to them, and to other Americans whom I met everywhere; but I was very much surprised to find that with some we had to be very cautious when any matter at all related to our respective nationalities cropped up. They seemed to be very sensitive

and to regard us in a way that I can only describe by saying that they seemed to watch us as if we might be giving ourselves "airs," and as if they were ready to resent it. One incident will illustrate my meaning. We stopped for three hours at

GIBRALTAR

and paid a visit to the town. As we approached the gate an officer stopped me and asked if I was a British subject; I answered, "Yes, from Canada." "You may enter," he said courteously. I noticed that most of the passengers received blue tickets and felt as if I might have missed some privilege, so on my way back to the steamer I asked an explanation from the officer. "Oh!" said he, "British subjects have free right of entrance, but foreigners must get permission. The blue tickets were permits." Our American friends noticed the incident, and after we had left the harbor some of them seemed to think that we must be conceited about the possession of the fortress, and resolved to take it out of us by exciting feelings of remorse on the score that it wasn't honestly ours, but belonged by right to the Spaniards. That we had got and held it by force, in short. Of course I might have tried to make their tears flow over the fact that they were occupying New York, a city taken by force of British arms from the Dutch, who again had obtained it by questionable means from an Indian tribe, who had probably tomahawked and scalped their predecessors. But the "tu quoque" argument too often rouses anger, so I simply pointed out that Gibraltar had been captured eighty years before they had separated from us and therefore, that their forefathers were just as much to blame as ours for the transaction. This put another aspect on the case, and we heard nothing more about the rights of Spain, but we did hear some speculation in which the capture of Gibraltar was regarded as a joint British and American enterprise.

Proceeding from Gibraltar to Genoa I soon made my way to

ROME,

from which I tore myself away reluctantly at the end of a fortnight. It would be impossible, in the time at my disposal, to

make even the briefest allusions to all that interested me there without omitting what interested me still more in my visit to Athens. If any one asks why Athens was more attractive than Rome, let him consider the causes of the fascination which Athens exerted on the Romans themselves. Let him remember that Athens was the first university, although not so called, that it was, as Milton terms it, the "Mother of Arts," and the train of thought thus induced will be sufficient explanation. Of course I visited other towns and historic sites as they came in my way, but these also I must omit. Going from Rome to Naples, I went, after seeing the ruins of Pompeii and the Greek temples at Paestum, across the country to Brindisi (a name that always recalls the "Iter ad Brundisium.") From Brindisi a very comfortable steamer took me to Patras. We stopped at Corfu, suggesting under its old name Corcyra, reminiscences of the origin of the Peloponnesian war. Ithaca, which I was very desirous to see, we passed at night both in going and returning. From Patras a railway journey along the Gulf of Corinth brought me to Corinth. On this same line, when returning, I saw the top of Mount Parnassus, covered with snow. At the Isthmus the train crossed the new canal by a bridge more than 200 feet above its level. This canal at Corinth, which I could see from end to end as we crossed, thought of by Julius Cæsar and attempted by Nero, is now near completion. The whole route from the starting point to Corinth, and thence by Megara to Athens, is full of historical associations, which culminate when the Acropolis comes into view.

ATHENS AND EDINBURGH.

Every one knows that the hill of the Acropolis rises abruptly from the plain at Athens and that its summit is crowned with the ruins of the Parthenon and other famous buildings of antiquity, but no description can produce the effect of the reality to a traveller approaching from the side of Megara when he first sees it some miles off in the distance. The relative position of the Acropolis and some of the most interesting historical sites in Athens might be fairly depicted to any one well acquainted with

Edinburgb. Indeed I never properly appreciated the true origin of the epithet "Modern Athens" sometimes jestingly applied to Edinburgb until I began to think of describing Athens by a comparison with some city I had seen. Taking the rock on which the castle is built to represent the hill of the Acropolis, then, if we disregard the points of the compass, the base of it at the west end, near the Caledonian railway station, corresponds to the site of the Theatre of Dionysus. East of this and running somewhat parallel to Princes street would be the lower continuation of the same hill to correspond to the Areopagus. Eastward still the Calton hill would correspond to the hill of the Pnyx, and just as after ascending the Calton hill you see the Frith of Forth, so from the summit of the hill of the Pnyx you see the waters of the Saronic Gulf. The modern city of Athens lies chiefly to the north of the Acropolis—but houses come close to the hill on the east side also. Leaving the hotel in the "plateia tou santagimatos" we come by the "hodos philhellenon" round to the south-east corner of the Acropolis. Then leaving the road we cross an open space thickly covered with broken columns and fragments of ancient architecture and sculpture until we reach a low irregular wall, through which we pass by a rude gate opened to us by the caretaker, and we find ourselves in the

THEATRE OF DIONYSUS.

The low wall proves to be the remains of the "logeion" or stage. In this theatre the tragedies of *Æschylus*, *Sophocles* and *Euripides* and the comedies of *Aristophanes* were first exhibited. It is only within the last thirty years that the excavations have been made which have restored the theatre to the light of day, and we can now see the very "logeion" or stage on which the actors stood, the orchestra in which the chorus sang and moved, and the very seats of the spectators rising tier above tier up the slope of the Acropolis. The marble or stone work, no doubt, is of a later time than that of the first dramatists.

So recent is the discovery that I believe most classical text books make no

allusion to it. I read in a popular magazine an article published only three years ago, giving a description of this very theatre, carefully prepared from the perusal of books, which winds up by saying that only a few stones are to be seen marking its former site. Nay, more, in a well known excellent history of Greece, with the date of 1891 on the title page it is said that the "dimensions of the theatre cannot be accurately ascertained." It says, too, as does also the article I have referred to, that the spectators had a "distinct view of the sea." As a hill intervenes this is impossible, except, perhaps, from the highest seats, all of which have disappeared. Another instance may be mentioned of an error to be found in many books due to a mistranslation of a passage in *Pausanias* (the "Baedeker" of antiquity), which is at once corrected by a personal visit. It is often stated that the point of the spear and the crest of the helmet of the statue of *Athena Promachos* could be seen by sailors as far away as the promontory of *Sunium*. It ought to be mentioned that it is necessary to success that one should be able to see through *Mount Hymettus*. However, we in *Montreal* have no reason to be envious of the power of vision indicated in the above instances, for, if we are to believe what has been said of us, we can see right through the body of the earth itself, at least a portion of it. I have seen it stated in print that a person on the top of *Mount Royal* can, on a clear day, with a good telescope, see the tops of the masts of the ships in *Portland harbor*. This surpasses the feats previously described. After the first feelings that arise at being on the very spot where the Greek dramas were presented to their proper audience have subsided, it is natural to examine the theatre itself. It is, of course, large. But we ought not to compare it with modern buildings, remembering that it is an open air theatre, never having had a roof or covering, having been only used for a few days in the year, and intended to hold the whole free male population of Athens all at one time, sitting there, perhaps, from early morning until darkness came on. *Plato* says that it held 30,000 people. Doubts have been thrown on the possibility of this, judging from its present appearance. Looking at the great

size it is natural to desire to test the
ACOUSTIC PROPERTIES,

and I did so. Standing on the "logeion" I asked another visitor to stand on the 25th tier of seats, and then said a few words, with a moderate effort as I thought. To my surprise the remark instantly came back, "you are speaking too loud." To my surprise, I say, for there was no wall or surface of any kind behind my back, such as must have existed in old times to reflect and so strengthen the sound. Lowering my voice to about the ordinary loudness required in a large room conversation was carried on with perfect ease.

We subsequently exchanged positions with the same result, but I had the advantage of personal experience of both positions. Although, however, the conversation could be easily carried on, the tones of the voices were distinctly different from what would be heard in a closed building. The absence of resonance was very clearly felt. And then, at once, the full value of the masks worn by the actors, from an acoustic point of view, struck me with a freshness of meaning never before perceived. These round open mouths, which look so ugly in the ordinary woodcuts or engraving, suggest at once the end of a speaking trumpet; the full force of the term "bombon," as applied to the voice of the tragic actor, becomes obvious; and the truth of the derivation of the word "persona" for a "mask" seems unassailable. Again, when you are on the spot you are impressed in a way which mere reading cannot produce with the fact that the details of the mask could not have been visible to spectators in those ages which possessed no opera glasses. The seats in the theatre generally have no backs. The lowest tier is an exception. This consists of

HIGH-BACKED MARBLE CHAIRS

of ample proportions. They were the official seats of the priests, whose official titles are cut into the marble, and as legible now, probably, as the day they were made. I had great pleasure in sitting in those chairs and trying to conjure up a vision of the past. I happened first to try that which belonged to the priest of Æsculapius; then, for a change, that of the priest of the

Olympian Zeus, then several others. All had one common characteristic, they were very comfortable owing to the support given the body by the perfect curvature of the back. They did not look so, and I at first sat down with a good deal of caution, succeeded by a strong feeling of surprise to find how comfortable they were. I finally came to the conclusion that they were more comfortable than any chair I had ever sat in before. On mentioning this opinion to a friend in Montreal, he asked me if I had taken any notes of the pattern so that it might be reproduced. I fancied, rightly or wrongly, that there was a slight air of incredulity associated with the question. I was therefore very much pleased a couple of weeks ago in turning over Professor Mahaffy's "Rambles and Studies in Greece" to read his remarks about these marble chairs. "They are," he says, "of the pattern usual in the sitting portrait statues of the Greeks—very deep, and with a curved back, which exceeds both in comfort and in grace any chairs made by modern workmen."

THE RELIGIOUS ASPECT OF THE DRAMA

is strongly impressed on a visitor by the presence of these official seats for the priests; and its religious origin in the chorus is emphasized by the great extent of the orchestra assigned to so small a body of men and the contrast presented by the narrow "logeion" or stage reserved for the actors. This last suggests the almost casual way in which the dialogue was introduced although it subsequently ousted the chorus from the chief place. It is stated by Diogenes Laertius that Thespis introduced one actor in order to give a rest to the chorus, a statement probably parodied by the musical enthusiast who a short time ago, said that the use of a preacher was to give a rest to the church choir.

Æschylus by introducing a second actor, and Sophocles subsequently a third, entirely altered the relative positions of the chorus and the dialogue. Standing on the stage it is not difficult to imagine all these seats crowded, at the performance of some of the comedies of Aristophanes, with the whole of the citizens of Athens (women were not present at the comedies). The thought will then probably occur that these same men,

meeting in the Pnyx, about half a mile distant, were the absolute rulers of Athens and Attica, each man giving his vote personally and not through representatives, on questions involving confiscation of property, life or death, domestic and foreign policy, peace or war. This looks like universal suffrage carried to its extreme. Yet it was so far from it, that the working classes, as they are now called, had not only no share in it, but they were generally slaves. The father of Demosthenes, for example, was engaged in the business of sword-making and also as a cabinetmaker. But he bought his workmen, not hired them; and Demosthenes tells us the average price he paid for them. In short, four persons out of every five in Attica were slaves. Whatever may be thought of universal suffrage, there can be no doubt of the great advance in civilization at the present day, largely due as it is to the principles of Christianity diffused by a wider education. The terms "liberal education" and "liberal arts" still testify to the existence of this former state of things. For a "liberal education" means strictly an education worthy of a free man, and if the name be correct, we may deduce as a corollary that the more widely it is extended, the more free men there will be, men free not only in body but in mind.

Let us go back to the spectators in the theatre; spectators or legislators whichever you please to call them. In this double capacity it was natural that politics should enter largely into their amusements, and

ARISTOPHANES

certainly gave them an ample supply, and he didn't treat the politicians gently. Horace tells us that he used to censure any bad man or "boodler" "malus aut fur" with a good deal of freedom, "multa cum libertate." Of this there can be no question. He took liberties with their characters and in his suggestions for their punishment that even in these days of the liberty of the press might surprise us. In the play of the "Knights" attacking the great political party leader of the day, the prime minister, Cleon, and accusing him of dishonesty in dealing with the public funds before the very

men whose votes kept him in power, there is a part where the chorus begins with "Paie, paie ton panourgon," etc., which is translated by Frere thus.

THE BOODLER, 424 B. C.

"Close around him, and confound him, the confounder of us all,
"Pelt him, pummel him, and maul him, rummage, ransack, overhaul him,
"Overbear him and out-bawl him; bear him down and bring him under,
"Bellow like a burst of thunder, robber! happy! sink of plunder!
"Rogue and villain! rogue and cheat! rogue and villain, I repeat.
" Oftener than I can repeat it, has the rogue and villain cheated."

And again, further on, beginning with the words "O miare kai bdelure," which Frere translates:—

"Dark and unsearchably profound abyss
"Gulf of unfathomable
"Baseness and iniquity!
"Miracle of immense
"Intense impudence,
"Every court, every hall,
"Juries and assemblies, all
"Are stunned to death, deafened all
"Whilst you bawl,
"The bench and bar
"Ring and jar."

"Whilst we
"Scorn and hate, execrate, abominate
"Thee the brawler and embroller of the nation and the state."

There were no newspapers in those days, but it looks as if Aristophanes felt the want and did his best to supply what was lacking. Some such thoughts as these passed through my mind as I stood looking at the place where the auditors sat who first heard this chorus and at the open space where the chorus itself marched, and wheeled and sang.

"This, again, is the place where
"The lofty, grave tragedians taught
"In Chorus or fable, teachers best
"Of moral prudence, with delight received
"In brief sententious precepts, while they treat
"Of fate, and chance, and change in human life,
"High actions and high passions best describing."

There is one chorus in the *Edipus Coloneus* of Sophocles which no one that has read seems ever able to forget, that one in which he describes the nightingales singing under the deep foliage of the groves at Colonus, shaded from the sun and sheltered from all the storms. This must inevitably occur to the visitor of the theatre, and it was the thought of

this that sent me another day on an excursion to

COLONOS ITSELF,

although I knew that the groves had disappeared. It is about a mile and a half outside the present city. But although the small hill of Colonos is now covered with grass and distinguished only by white marble tombstones marking the graves of two foreigners, Lenormant and Ottfried Muller, quite close to it there are deep, dark olive groves watered by the Kephissos now as in ancient times. Even at the present day Attica owes much to the Kephissos, which nur ures these groves along its banks over a strip of country about ten miles long by two broad; a strip all the more striking from the brown, bare, treeless face of the rest of the land. In my short stay I had no opportunity of hearing the nightingales. I was all the more pleased, therefore, when at dinner in the hotel one day, a lady present at the table remarked that the singing of the nightingales in the Royal gardens (which had thick dark groves such as described by Sophocles) was worth going some distance to hear. This lady was evidently quite unconscious of the associations connected with these nightingales, but when I mentioned the incident afterwards to a friend in London, "What," he called out, "the descendants of Sophocles, nightingales." I tried to get a chance to hear them myself, but failed. However, the nightingales are still to be heard not only in the Royal gardens, but in the groves on the banks of the Kephissos. An additional inducement for a visit to Colonos is the fact that not far from it were the celebrated groves of Academus.

KEPHISSOS.

As an example of the straits to which commentators are driven, who cannot make a personal visit to the scenes they describe, I may offer the following note: Wunder, a well-known German scholar, in a note on the *Ædip. Colon.* l. 687, states that the Kephissos flows into the sea not far from Eleusis, using the present tense (1849), and then gravely points out an error of Strabo, who lived at the beginning of the Christian era, for confounding it with a stream that flowed into the Phaleric Bay. This he does on the

authority of a learned archaeologist—"virum antiquitatis peritissimum"—who had visited the place in 1678. As a matter of fact at the present time the Kephissos hasn't a chance of getting to the sea at all, or even to Athens, every drop of it being absorbed beforehand in irrigating the soil on each side. Water is too precious there to be allowed to waste itself in the Aegean.

The observations of lady travellers who cannot be suspected of having read the Greek dramatists in the original are sometimes more valuable or interesting than those of men. They cannot be charged with prejudice. I have already given one example. Let me mention another.

The Athenians were very proud of a quality in their air, which they indicated by the adjective "lampros," meaning "clear" or "pellucid." The term is used in a well known chorus in the "Medea" of Euripides when he speaks of the Athenians as "descendants of Erechtheus, ever walking with elastic step through the most

PELLUCID AIR."

"*Dia lamprotaton aitheros.*" It is probably to the quality indicated here that the sharp definition of the shadows cast by bodies in the sunlight is to be attributed. A lady remarked to me that they were like those cast by the electric light. It was very gratifying to hear such an observation, confirming my own, made by one whose judgment was not warped by previous association of ideas.

I have said that the Pnyx is about half a mile from the Theatre of Dionysos. The same road which brings us to the latter runs westward along the base of the Acropolis, or, to speak a little more accurately, passes along the kind of valley which lies between the Acropolis and the hill on the opposite side called anciently the Monseion. It then takes a bend to the right before we reach the Pnyx. As we pass along the road we see some distance upwards on the hill to our right three openings in the rock closed with wooden doors which go by the name of the prison of

SOCRATES.

These are really three chambers cut in the rock and connected by internal passages, but what reasons there may be for calling them the prison of Socrates, I

do not know. They do, however, forcibly remind us that we are not far from the place where Socrates spent so great a part of his time, the famous Agora, or market-place, of ancient Athens, in which he used to enter so freely into conversation with any one who would talk to him, and try to make the other conscious how very little he knew. This must have been trying at times even to the gossip-loving Athenians, and it is not, perhaps, so surprising that they eventually poisoned him. But he had made his name immortal before his death, although he never wrote anything himself. We here in Montreal are indebted to him for one of the endowed professorial chairs which we possess. It is not called by his name, it is true, being in fact termed the Frothingham Chair of Moral Philosophy, but then, as Socrates was the founder of Moral Philosophy, he is sufficiently commemorated in the title. Since mention has been made of one chair, it may not be out of place to point out how much of our university work really originated with the Greeks, more especially as Athens was undoubtedly the first university. In addition to Mental and Moral philosophy we owe Mathematics and Logic entirely to the Greeks, some of their very text books being in use to the present day. The Natural Sciences owe their beginning to Aristotle, the founder of one of the four schools or colleges that owed their existence to the initial movement of Socrates. We cannot say that we owe much of the Physical Sciences to them, for in these their efforts were fruitless. Yet they deserve great credit for their attempts. They directed their attention to these, even before those above mentioned, and this is to a certain extent commemorated in the term

NATURAL PHILOSOPHY,

which we really owe to the Greeks, as may be shown by a quotation from Diogenes' Laerteis in his "Lives of the Philosophers," although Germans and others sneer at this use of the word Philosophy as if it were a British usage only. Hence the practice on the continent of Europe and in the United States of denoting by the term "Physics" what we call "Natural Philosophy." As regards

LITERATURE

the Greeks had, of course, no such accumulation of treasures as we possess. They were, in fact, themselves beginning the creation of the literature of modern Europe. But that they had a true feeling of the necessity for its cultivation is exemplified in an anecdote told of Alkibiades, who was, as we know, a pupil of Socrates. It is said that he once found a schoolmaster who hadn't a copy of HOMER, and his indignation was excessive. In modern times he might have relieved his feelings by belaboring the school commissioners in the newspapers, or, as he was wealthy, he might have founded a chair for the literature of his mother tongue, such as our Molson chair of English literature; but it was only the time of Socrates, and the colleges did not then exist. For want of a better means possibly, he expressed his opinion, somewhat emphatically, by beating the schoolmaster. But to return to the

AGORA

Its boundaries are somewhat ill-defined, and when in Athens I was a good deal puzzled by Baedeker's description of its position. This did not at all agree with my recollections of other works. Of course I had but few books with me and had to depend largely on memory. But among other associations to guide me I had very vividly before my mind a picture of the chattering Athenian citizens loitering in the Agora when they ought to have been in the Pnyx, and of the lively scene that took place when they were chased in by the Scythian policemen armed with ropes colored with red ochre. Any one struck with these and found with the mark of the ochre upon him was fined. This I could not reconcile with Baedeker's account. He seems to have ignored the fact that there was a new Agora as well as an old Agora, and to have confused the two. The old Agora, or the Agora, as it has been termed, was close to the Pnyx.

THE AREOPAGUS.

More than four centuries later than the time of Socrates in this same Agora (or market, as it is translated in the New Testament), which is now bare and desolate, but was then filled with statues of gods and heroes, and illustrious men, and adorned with fine buildings, it is easy to

picture the Apostle Paul walking about and conversing with those he met, just as Socrates used to do, and here he encountered certain philosophers of the Epicureans and Stoics. It was no doubt their systems that were most popular at the time, but a visit to the spot suggests another reason why the philosophers of the Academy or the Lyceum are not mentioned. The simple explanation seems to be that the college, if it may be so called of the stoics, the "Stoa Poikile," was in the Agora itself, and the "Garden" of Epicurus was not far off, while the Academy and the Lyceum were each about a mile and a half away in different directions, one to the north and one to the east. These philosophers invited St. Paul to go with them to the Areopagus, Mar's hill, which is close at hand, and it is this occurrence that made the Areopagus the most interesting point to me in all Athens. It is often spoken of as a separate hill, but it is really only a projecting spur of the hill on which the Acropolis was built. The path and the steps leading up to it are about half way between the Pnyx and the Theatre of Dionysos. The philosophers were evidently the professors in the university of Athens, and here we have Christianity encountering Paganism in its most intellectual and artistic forms. But the supporters of Paganism were theorists who didn't believe in their own theories. It has even been suggested that they may have yawned over their own lectures, and that it was a delicious treat to them to meet with a man who not only had a new system to propose, but actually believed in it himself, and was urging it with red-hot zeal upon all comers. But it was inconvenient to listen to him amid the din of the Agora, and hence they invited him to ascend to the open space at the top of the Areopagus, where they could listen at their ease.

It is a great pity that in our translation of the speech of the Apostle the courtesy of the opening part is turned into something like rudeness by using the word "superstitious." Great reverence for religion was characteristic of the Athenians, and the city showed this in its numerous temples and statues to the gods. The Apostle compliments them on this feeling:

THE PNYX

is on a kind of artificial terrace on a hill, which slopes gently upwards to the platform of rock from which the orators spoke. It is supported below by a massive stone wall and bounded above by a wall about a dozen feet in height, cut out of the solid rock. Here again I was thrown into a state of doubt. I desired very much to see the *bema* or platform on which Demosthenes stood while delivering his Philippics and Olynthiacs, where also he failed so utterly in his first attempt at speaking on state affairs that he was driven away by the hooting and jeering of the auditors, just as Disraeli at his first attempt to speak in the House Commons. No doubt the *bema* was there, the platform of rock with an ascent of steps also cut out of the rock that I have referred to. My difficulty was that there were two *bemata* to choose from and also apparently a lower and an upper Pnyx; the upper one with its *bema* being reached by ascending the high boundary wall of rock, and crossing over it.

From the upper Pnyx there is a fine view of the sea; from the lower there is none. Wordsworth's Greece has not helped me to solve the problem thus presented, for while the engraving presents a good sketch of the lower Pnyx there is combined with this a view of the sea which can only be obtained from the upper. Strangely enough, in such a book as Smith's Dictionary of Antiquities the Pnyx is said to be on a slope connected with Mount Lycabettus. We might as well say that McGill College was at the back of Mount Royal.

A thought vividly impressed by my short visit to Athens was this. If I, whose classical studies must necessarily be irregular, although I have always kept them up, found, in a short stay of five days only, not merely so many objects exciting the keenest interest, but so much new light thrown on my reading, and so many things suggesting a stimulating further inquiry, how much more would those professors find whose life work these studies are, if they had sufficient time and means at their disposal. Those who are interested in classical studies in the United States have shown the value they set upon opportunities offered for this purpose, by establishing at

Athens an American School for Classical Studies, and many of the best universities have co-operated with them by affording to their professors facilities for extended residence and study there such as do not exist in Canada.

The American is, moreover, only one of four schools; the others being the British, French and German. The latter two being supported by their respective governments, while the British and the American are the results of voluntary effort. The thought is not limited to classical studies. One need only run over a list of the subjects taught in the university to see in how many cases it would be of the highest advantage that Professors should have adequate opportunity to visit other countries and other seats of learning, and to come in contact with men engaged in the same studies.

THE BRITISH ASSOCIATION.

Possibly the most valuable of all are the opportunities for direct interchange of thought with men engaged in the same studies. Such opportunities as are offered, for example, by the meetings of the British Association, for the Advancement of Science.

The annual meeting of this association frequently takes place at a time that is inconvenient for those whose duties begin so early in the autumn as, ours in this university. In 1839, for example, I was in England, and could have attended only that the week of meeting coincided with the beginning of our session. This year, however, it was earlier than usual, and I prolonged my stay a month more than I originally intended in order to get the advantage of it. Of course, my chief object was to be present at the meetings of Section A, that for Mathematical and Physical Science. I thought, too, that I might go occasionally to some of the other sections; but I found so much of the highest interest in my own that I was unable to leave it even once. I am not going to dwell on the work of the section. But I think it may be well to try to remove a misconception that I believe exists in many minds as regards the special objects of the British Association. No distinction appears to me made between it and other scientific societies, such, for example, as the

Royal Societies of London or Edinburgh. It is, of course, a scientific association where scientific papers are read and discussed, and in that respect like them. A great difference, however, is indicated in the fact that while others always meet in the same place, it moves about, never holding two meetings in the same place except after long intervals. This is done that it may attain two objects which the association keeps in view, and which are additional to those of the ordinary local societies, viz.: 1, the promotion of intercourse among scientific men in general as distinguished from those of a particular locality; 2, to excite and promote a desire for scientific knowledge among the public.

These last two objects are overlooked or misunderstood not only here but in Great Britain itself, and have caused some discussion there latterly. It seeks to attain them by admitting as members of the association not merely scientific men, but all interested in science. It cannot impose an entrance examination for this purpose. The sole test is, therefore, the payment of the annual fee. For the benefit of these members there are special lectures to them only, as well as the admission to the sectional meetings. There is always one lecture to which the public are admitted on payment of a trifling fee. The distinction between meetings that are exclusively for scientific men and those to which others also are admitted is by no means new. It is as old at least as the time of Aristotle, who delivered his *esoteric* lectures to a chosen few in the morning, and his *exoteric* lectures to a more promiscuous gathering in the afternoon. The promotion of social intercourse among the members, scientific and non-scientific, is sought by means of conversaciones and excursions. It is these excursions and conversaciones that cause most misapprehension, and not unnaturally. The general public think that they know all about excursions and conversaciones, and that these do not differ from others in any way. To an outside spectator, no doubt, they do not, and very possibly among the non-scientific members there is little difference, though there is probably some. But among the scientific men themselves the

case is otherwise. As an instance that came under my own observation I may mention that on an excursion to the "Land of Scott" as it was called, i. e., Abbotsford, Melrose Abbey, etc., I happened to be in a railway carriage where were eight passengers, four being ladies, and three gentlemen, besides myself. The three were prominent astronomers, one from Scotland, one from Ireland, one from the United States. I can assure you, they talked a good deal of astronomy in that carriage; the ladies hadn't a chance even to mention Sir Walter Scott.

As another example of the value of these conversaciones and meetings, I hope I may be excused if I speak of something personal to myself, though it may be of wider interest. Some of the facts, at any rate, are curious as showing the value of going to the fountain head for knowledge and the necessity of verifying quotations, even scientific quotations.

NEWTON.

If ever there was a man about whose scientific achievements no mistakes would be made, one would suppose it would be Newton. The most unlikely of all countries to make such mistakes would be supposed to be Newton's own land, England, and the readiest to proclaim and correct the mistake, if made, one would suppose to be Newton's own University, Cambridge. Yet it is precisely in England that the error of which I am going to speak, has spread widely, and the text books of Cambridge have concurred in it either directly or by silence. The cause is, no doubt, that some of Newton's works are not readily accessible, combined with a reliance on quotations. Newton was the first to investigate the properties of the Solar Spectrum, but he did not observe the dark lines in it, the importance of which is now known to be so great. Since the introduction of Spectrum analysis it has been said in books, over and over again, that Newton did not think of, or at any rate employ the best method for examining the Spectrum, by using a narrow slit, and so did not discover the lines. Now, I had the good luck to get a copy of Newton's Optics, and read it, and so to my surprise found Newton saying in the most

precise terms, that he had used the slit. At first I did not believe it possible that the error could be as widespread as it seemed, and published nothing about the matter for some years. About ten years ago, thinking it necessary to notice it, I wrote to *Nature* as being the journal by which the attention of scientific men might be most easily gained. In this, however, I seemed not to have succeeded, and I deemed it advisable to take up the subject again in a short paper read before the Royal Society of Canada." This contained not only quotations showing the erroneous statements, and extracts from Newton's Optics, which proved them to be erroneous, but also an account of a repetition of Newton's own experiments in which dark lines were seen perfectly. Why Newton didn't see them is matter of conjecture. The paper contained the suggestion that in order to meet the error fully it would be well to reprint Newton's Optics. This paper was published last summer while I was in Europe, and copies were sent to different scientific men. By a curious coincidence I happened to meet one of them, Sir George Stokes, the present occupant of Newton's chair and formerly President of the Royal Society as well as of the British Association, at the Dublin Tercentenary, at the very time he had in his pocket a letter addressed to me, whom he supposed to be in Canada. This he handed to me, and we had a conversation thereon. He thinks that the glass used by Newton was to blame. He had not been aware of the prevalence of the error, and of course knew that the common statement was incorrect. But it was at Edinburgh at the conversaciones, and on other occasions outside the sectional or scientific meetings proper that I had the best opportunities for conversing with him and Lord Kelvin and others of high scientific reputation. As a result I had a letter from Sir George Stokes about a fortnight ago in which he very kindly informed me that the Press Syndicate of Cambridge University before whom my suggestion had been brought would consider the question of reprinting not merely Newton's Optics, but all Newton's Mathematical works at the same time. What will be the outcome of the conside-

ration I cannot tell; but it is a great point gained to have the question considered. Attention has been thus practically drawn to the subject, and this exemplifies the benefit of these conversaciones as contrasted with my communication to "Nature" in 1882, which seems to have had little result, although I have had reason to believe latterly that it had some. So great was the pleasure that I felt in attending the sectional and other meetings, and so strongly did I feel the benefit from the discussions of the most recent advances in science, that I could not help regretting greatly that I had so few chances of attending the meetings; and yet I was no worse off than other Canadians. I believe, indeed, that I was the only Canadian professor present in Section A. I saw professors present from the United States there, but none from Canada. For the other sections I cannot speak, although I suspect a similar statement might be made for them.

Speaking of my regret to a well known member the thought was suggested that the association might be induced to visit Canada again soon, and I proceeded to make enquiries for a visit in the year 1895 among the members individually, taking them as I casually met them, in order to test the general feeling. To my great delight I received favorable replies in every case but one. The one exception was going to Chicago in 1893. I may say that 1895 is the earliest possible year, since meetings are appointed for 1893 and 1894 at Nottingham and Oxford respectively. I found there was apparently no chance of their coming to Montreal after so short an interval as 11 years, but the suggestion of Toronto met with approval. The individual replies only confirmed an opinion expressed to me by one who was very likely to know the general feeling as well as it could be known without formal inquiry. Since my return I have written to some of the leading educational and scientific men in Toronto, and the suggestion was, as might be expected from the reputation of Toronto, warmly taken up and now I am happy to be able to state that the Canadian Institute has resolved to take steps preparatory to sending an invitation to the British Association to meet in Toronto in 1895. They will give

this invitation in their own name, but they give it not for themselves alone, nor for Toronto alone, but for all Canada, just as the Natural History Society in this city did in 1884. And as the invitation of the Natural History Society was endorsed and supported not only by Montreal but by all Canada, so I feel sure it will be in this case. The benefit will be to all Canada, and not to one locality. I may say more, the advantages will extend not merely to Canada, but to all English-speaking America. Who does not remember that in 1884 the Americans came to the British Association and the British went to the American Association, and all worked heartily together in the common cause of science and in the practical recognition of the unity of the race. Was this not really an initial step towards establishing that

ANGLO-SAXON OLYMPIAD

which is being discussed in the magazines, whose object would be, like that of the Olympic games among the Hellenes, to recognize and further a feeling of common nationality by race, if not by government. But the Canadian Institute does this in the expectation that it will be aided from every quarter of Canada, and not least from this city in which so much of the power and energy of Canada is centred. When I say this city, may I not include this University also, for the same power and energy which have made the city eminent have created and fostered the university also, and to promote its interests still further they will do well indeed if they support the invitation to the British association to the utmost of their ability. A second visit to Canada would, in all probability, lead to regular visits at stated intervals, and this for an association which originally contemplated the British Isles as its limits, implies the practical reduction of the Atlantic to the same category as the Irish Channel. It implies still more. If ever the Anglo-Saxon Olympiad be really established, though it may begin in England, yet it will naturally tend to the most central point, the most convenient for the whole race, and where will that be in the future, if not in Canada?

