

The Canadian Journal.

TORONTO, OCTOBER, 1853.

Twenty-third Meeting of the British Association for the Advancement of Science. Hull, Sept. 7, 1853.

GENERAL MEETING.

The first General Meeting was held in the Saloon of the Mechanics' Institute, at eight o'clock in the evening: when Colonel Sabine took the chair,—but only for the purpose of resigning it to his successor. This he did in the following words:—"In addressing you for the last time from this chair, in which your kindness has been pleased to place me, I have yet one duty to perform,—and it is one which is extremely agreeable. It is to introduce to you a gentleman who by the General Committee has been selected as my successor. It has been considered necessary by gentlemen who have preceded me on several occasions to dwell on the qualifications and on the merits of the gentleman selected; but in this case Mr. Hopkins is so eminently distinguished, his accomplishments in the various branches of science, his general courtesy and amiability, and his kind disposition, have been so long and so universally appreciated, that I feel confident I shall take the course which is most agreeable to your wishes in introducing him to you in the fewest possible words. I will, therefore, with your permission, request Mr. Hopkins to take the chair to which the General Committee has so worthily elected him."

The President for the year then took the chair, and delivered the following inaugural Address on the objects and proceedings of the Association:—

The President's Address.

Gentlemen of the British Association,—Before I proceed to those remarks which I may have to address to you on matters of science, let me avail myself of this opportunity of expressing to you the sense I entertain of the honour which you have conferred upon me in electing me to the Presidency of this Association. When the high office was first proposed to me, I could not but feel the importance of the duties attached to it. I felt, also, that there must be others who had higher claims to the honour than myself. But I was aware how frequently difficulties will occur in the immediate appointment to such offices of the persons most competent to fill them; and after having been invited to the office by those best qualified to decide such points, I conceived it right not to shrink from its responsibilities, but at once to accept it, with the determination of performing the duties it might impose upon me to the best of my ability. I have had the less hesitation in adopting this course from the knowledge of the effective and ready assistance which I should always receive, not only from our excellent Secretary, Mr. Phillips, but also from my predecessor in this chair, who is so intimately acquainted with the whole working of the association, to which he has rendered so long and so cheerfully such invaluable services. After thanking you, gentlemen, as I do most sincerely, for the high compliment you have paid me, and assuring you of my best efforts in the cause of the Association, I proceed to lay before you such statements and remarks on scientific subjects as have presented themselves to my own mind for this occasion. In doing this, I cannot but regret my inability to do justice to many subjects which might be interesting to you; and indeed, the limited time for

VOL. 2, No. 3, OCTOBER, 1853.

which I should be justified in demanding your attention to an oral communication, will oblige me to omit this evening several even of those points which I was prepared to bring under your notice.

Astronomical science still continues to prove to us how much more populous is that portion of space occupied by the solar system than was suspected only a few years ago. Between the 23rd of June, 1852, and the 6th of May, 1853, nine new planets were discovered, of which seven were found since the last meeting of the association. Of these nine planets, our countryman, Mr. Hind, has discovered four. The number now known, exclusive of the large planets, but including the four old asteroids, amounts to twenty-six; nor have we any reason to suppose that we have yet approximated to the whole number of these minor planetary bodies. All those which have been recently recognized appear like stars of magnitude not lower than the eighth or ninth, and are consequently invisible to the naked eye. The search for them has now assumed, to a considerable extent, a more systematic form, by a previous mapping of the stars up to a certain magnitude, and contained in a belt of a few degrees in breadth on either side of the ecliptic. Any small planet will in the first instance be inserted in the map as a small star, but will on the re-examination of the same area some time afterwards, be recognized in its true character, from the fact of its having moved from the place in which it was first observed. This mapping of the ecliptic stars from the eighth to higher magnitudes, is still comparatively limited; nor has the length of time during which any one portion, perhaps, of the space which has been thus mapped, been sufficiently great to ensure the passage through it, within that time, of any planet whose period is as long as the possible periods of those which may yet remain unknown to us. Analogy would therefore lead us to conclude in favour of the probability of their number being much greater than that at present recognized. All those which are now known lie between the orbits of Mars and Jupiter, but many may exist more distant, and of much smaller apparent magnitudes, and thus almost the same careful telescopic research may be necessary to make us acquainted with some of our planetary neighbours as with the remoter regions of space. Nor is the telescopic mode the only one by which we may detect the existence of remoter planets; for as Uranus betrayed the existence of Neptune, so may the latter hereafter reveal to us the retreats in which some more distant member of the system has hitherto hidden himself from the observation of man.

There would seem to be a tendency in the human mind to repose on the contemplation of any great truth after its first establishment. Thus, after the undisputed reception of the theory of gravitation, and the complete explanation which it afforded of the planetary motions, men seemed to think little of any further revelations which the solar system might still have to make to us respecting its constitution, or the physical causes which it calls into operation. The recent discovery, however, of so many planets, shows how imperfectly we may yet be acquainted with the planetary part of the system; and the continual discovery of new comets seems to indicate that in this department still more remains to be done. These curious bodies, too, may possibly have to reveal to us facts more interesting than any which the planets may still have in reserve for us. The experience of these latter bodies, if I may so speak, is more limited, and their testimony, consequently, more restricted. But they have already told us a noble tale. In moving, as they do, in exact obedience to the law of gravitation, and thus establishing that law, they have affirmed the highest generalization in physical science which it has been accorded to the human mind to conceive. At the same time, the approximate circularity of their orbits prevents their passing through those varied conditions to which comets are