

From that day she admitted her friends, attended the house of God, and became exemplary for piety and submission. It is not surprising that, to the close of her life, a shade of melancholy tinged her countenance, and she was unwilling to speak of the thrilling incidents of her youth.

THE BRITISH ASSOCIATION.

THE 30th Session of the British Association for the Advancement of Science commences this year at Oxford, on the 27th inst., under the presidency of the Right Hon. Lord Wrottesley, M.A., V.P.R.S. There is no difference of opinion now as to the important services rendered by this institution. Even the annual meetings, although merely review days, as it were, and holiday gatherings—the real work of the Association being carried on throughout the year—are of great benefit to science. Not only do they bring together philosophers from all parts of the empire and the world, thereby promoting a spirit of good fellowship while admitting of interchange of knowledge and ideas, but they tend to make science popular by the intermingling of classes between which there had been often too little sympathy or communion. They bring philosophy down from the clouds to mingle with the business and recreations of life.

To be President of the British Association is now regarded as a distinguished honour. Sometimes the election falls upon men celebrated for personal labours in certain branches of science, sometimes on those who unite scientific tastes with high social position. The president of the past year was His Royal Highness the Prince Consort, and the post could not have been better filled. Not identified with any particular branch of research, there is hardly a department of science with which the Prince is not conversant, and on the history and condition of which he cannot exercise a discriminative judgment. This scientific culture doubtless in part arises from natural taste, but is in some measure to be referred to early training and a German (Bonn) university education. Whatever the merits of the system of Oxford and Cambridge, the warmest admirers of these venerable institutions must confess that, until very recently, and this in no small degree through influences brought to bear by the Prince Consort, they gave too little encouragement to the cultivation of applied sciences.

Some extracts from the address delivered by the Prince Consort at Aberdeen, where the meeting was held last year, will convey a favourable idea of the objects, advantages, and services of this now truly national institution.

THE PRESIDENCY OF 1859—1860.

"Gentlemen of the British Association—Your kind invitation to me to undertake the office of your President for the ensuing year could not but startle me on its first announcement. The high position which science occupies, the vast number of distinguished men who labour in her sacred cause, and whose achievements, while spreading innumerable benefits, justly attract the admiration of mankind,

contrasted strongly in my mind with the consciousness of my own insignificance in this respect. I, a simple admirer and would-be student of science, to take the place of the chief and spokesman of the scientific men of the day, assembled in furtherance of their important objects!—the thing appeared to me impossible. Yet, on reflection, I came to the conclusion that, if not as a contributor to or director of your labours, I might still be useful to you, useful to science, by accepting your offer. Remembering that this Association is a popular association, not a secret confraternity of men jealously guarding the mysteries of their profession, but inviting the uninitiated, the public at large, to join them, having as one of its objects to break down those imaginary and hurtful barriers which exist between men of science and so-called men of practice—I felt that I could, from the peculiar position in which Providence has placed me in this country, appear as the representative of that large public which profits by and admires your exertions, but is unable actively to join in them; that my election was an act of humility on your part, which to reject would have looked like false humility—that is, like pride—on mine. But I reflected further, and saw in my acceptance the means, of which necessarily so few are offered to Her Majesty, of testifying to you, through the instrumentality of her husband, that your labours are not unappreciated by your Sovereign, and that she wishes her people to know this as well as yourselves. Guided by these reflections, my choice was speedily made, for the path of duty lay straight before me."

ORIGIN AND OBJECTS OF THE BRITISH ASSOCIATION.

"When, on the 27th of September, 1831, the meeting of the Yorkshire Philosophical Society took place at York, in the theatre of the Yorkshire Museum, under the Presidency of the late Earl Fitzwilliam, then Viscount Milton, and the Rev. W. Vernon Harcourt eloquently set forth the plan for the formation of a British Association for the promotion of science, which he showed to have become a want for his country, the most ardent supporter of this resolution could not have anticipated that it would start into life full-grown, as it were, enter at once upon its career of usefulness, and pursue it without deviation from the original design, triumphing over the oppositions which it had to encounter in common with everything that is new and claims to be useful. Gentlemen, this proved that the want was a real and not an imaginary one, and that the mode in which it was intended to supply that want was based upon a just appreciation of unalterable truths. Mr. Vernon Harcourt summed up the considerations in graphic words, which have almost identically been retained as the exposition of the objects of the Society, printed at the head of the annually appearing volume of its Transactions:—'To give a stronger impulse and more systematic direction to scientific inquiry—to promote the intercourse of those who cultivate science in different parts of the empire with one another, and with foreign philosophers—and to obtain a more general attention to the objects of science, and a removal of any disadvantages of a public kind which impede its progress.'"



Albion

PRESIDENT OF THE BRITISH ASSOCIATION, 1859-1860.

NATIONAL UTILITY AND PUBLIC SERVICES OF THE
BRITISH ASSOCIATION.

"If the object of inductive science is the discovery of the laws which govern natural phenomena, the primary condition for its success is accurate observation, and the collection of facts in such comprehensiveness and completeness as to furnish the philosopher with the necessary material from which to draw safe conclusions. Science is not of yesterday. We stand on the shoulders of past ages, and the amount of observations made, and facts ascertained, has been transmitted to us and carefully preserved in the various storehouses of science; other crops have been reaped, but still lie scattered on the field; many a rich harvest is ripe for cutting, but waits for the reaper. Economy of labour is the essence of good husbandry, and no less so in the field of science. Our Association has felt the importance of this truth, and may well claim, as one of its principal merits, the constant endeavour to secure that economy. One of the latest undertakings of the Association has been, in conjunction with the Royal Society, to attempt the compilation of a classical catalogue of scientific memoirs, which, by combining under one head the titles of all memoirs written on a certain subject, will, when completed, enable the student who wishes to gain information on that subject to do so with the greatest ease. It gives him, as it were, the plan of the house, and the key to the different apartments in which the treasures relating to his subject are stored, saving him at once a painful and laborious search, and affording him at the same time an assurance that what is here offered contains the whole of the treasures yet acquired. While this has been one of its latest attempts, the Association has from its very beginning kept in view that its main sphere of usefulness lay in that concentrated attention to all scientific operations which a general gives to the movements of his army, watching and regulating the progress of his impetuous soldiers in the different directions to which their ardour may have led them, carefully noting the gaps which may arise from their independent and eccentric action, and attentively observing what impediments may have stopped, or may threaten to stop, the progress of certain columns. Thus it attempts to fix and record the position and progress of the different labours, by its reports on the state of sciences published annually in its Transactions; thus it directs the attention of the labourers to those gaps which require to be filled up, if the progress is to be a safe and steady one; thus it comes forward with a helping hand in striving to remove those impediments which the unaided efforts of the individual labourer have been or may be unable to overcome.

"Let us follow the activity of the Association in these three different directions. The reports on the state of science originate in the conviction of the necessity for fixing, at given intervals, with accuracy and completeness, the position at which it has arrived. For this object the General Committee of the Association intrusts to distinguished

individuals, in the different branches of science, the charge of becoming, as it were, the biographers of the period. There are special points in different sciences in which it sometimes appears desirable to the different sections to have special reports elaborated; in such cases the General Committee, in its capacity of the representative assembly of all the sciences, reserves to itself the right of judging what may be of sufficient importance to be thus recorded. The special subjects which the Association points out for investigation, in order to supply the gaps which it may have observed, are—either such as the philosopher alone can successfully investigate, because they require the close attention of a practised observer, and a thorough knowledge of the particular subject; or they are such as require the greatest possible number of facts to be obtained. Here science often stands in need of the assistance of the general public, and gratefully accepts any contributions offered, provided the facts be accurately observed. In either case the Association points out *what* is to be observed, and *how* it is to be observed. The first is the result of the same careful sifting process which the Association employs in directing the issue of special reports. The investigations are intrusted to specially appointed committees, or selected individuals. They are, in most cases, not unattended with considerable expense, and the Association, not content with merely suggesting and directing, furnishes by special grants the pecuniary means for defraying the outlay caused by the nature and extent of the inquiry. If we consider that the income of the Association is solely derived from the contributions of its members, the fact that no less a sum than £17,000 has, since its commencement, been thus granted for scientific purposes, is certainly most gratifying. The question *how* to observe resolves itself into two—that of the scientific method which is to be employed in approaching a problem or in making an observation, and that of the philosophical instruments used in the observation or experiment. The Association brings to bear the combined knowledge and experience of the scientific men not only of this but of other countries, on the discovery of that method which, while it economizes time and labour, promises the most accurate results. The method to which, after careful examination, the palm has been awarded, is then placed at the free disposal and use of all scientific investigators. The Association also issues, where practicable, printed forms, merely requiring the different heads to be filled up, which, by their uniformity, become an important means for assisting the subsequent reduction of the observations for the abstraction of the laws which they may indicate. At the same time, most searching tests and inquiries are constantly carried on in the observatory at Kew, given to the Association by Her Majesty, the object of which is practically to test the relative value of different methods and instruments, and to guide the constantly progressive improvements in the construction of the latter. The establishment at Kew has undertaken the further important service of verifying and correcting to a fixed standard the instruments of any

maker, to enable observations made with them to be reduced to the same numerical expression. I need hardly remind the inhabitants of Aberdeen that the Association, in one of the first years of its existence, undertook the comparative measurement of the Aberdeen standard scale with that of Greenwich, a research ably carried out by the late Mr. Baily. The impediments to the general progress of science, the removal of which I have indicated as one of the tasks which the Association has set for itself, are of various kinds. If they were only such as direction, advice, and encouragement would enable the individual or even combined efforts of philosophers to overcome, the exertions of the Association to which I have just alluded might be sufficient for the purpose; but they are often such as can only be successfully dealt with by the powerful arm of the state or the long purse of the nation.

"These impediments may be caused either by the social condition of the country itself, by restrictions arising out of peculiar laws, by the political separation of different countries, or by the magnitude of the undertakings being out of all proportion to the means and power of single individuals of the Association, or even the voluntary efforts of the public. In these cases the Association, together with its sister Society the Royal Society, becomes the spokesman of science with the Crown, the Government, or Parliament,—sometimes, even, through the Home Government, with Foreign Governments. Thus it obtained the establishment, by the British Government, of magnetic and meteorological observations in six different parts of the globe, as the beginning of a network of stations, which we must hope will be so far extended as to compass by their geographical distribution the whole of the phenomena which throw light on this important point in our tellurian and even cosmical existence. The Institute of France, at the recommendation of M. Arago, whose loss the scientific world must long deplore, cheerfully co-operated with our council on this occasion. It was our Association which, in conjunction with the Royal Society, suggested the Antarctic Expedition, with a view to further the discovery of the laws of terrestrial magnetism, and thus led to the discovery of the southern polar continent. It urged on the Admiralty the prosecution of the tidal observations which that department has since fully carried out. It recommended the establishment, in the British Museum, of the conchological collection, exhibiting present and extinct species, which has now become an object of the greatest interest.

"A deep debt of gratitude is therefore due to bodies like this Association, which not only urges the wants of science on the Government, but furnishes it at once with well-matured plans how to supply them with the greatest certainty and to the greatest public advantage. We may be justified in hoping, however, that by the gradual diffusion of science, and its increasing recognition as a principal part of our national education, the public in general, no less than the Legislature and the State, will more and more recognise the claims of science to their attention."

WHAT I SAW AT THE LONDON DOCKS.

BY THE AUTHOR OF "CURIOSITIES OF NATURAL HISTORY."

I LATELY had occasion to visit this busy and most interesting portion of our great metropolis, in company with a young midshipman who was about to proceed to Calcutta in the good ship "The Queen of the Clyde." Taking a steamer from Hungerford, we soon arrived at the Thames Tunnel, and of course paid our penny to look once more at this gigantic model of the burrow of the sea-worm, the *teredo navalis*—the same creature that ate up the Russian men-of-war sunk before the harbour of Sebastopol. It is curious to remark the deep hollow place which is worn away in the corner of the board where the man who takes the pennies sits, from the continuous friction caused by putting down the pennies in the same spot; also to observe the beautiful polish on the balustrades on each side of the steep stairs going into the tunnel, caused by the friction of people's hands as they allow them to slide down in descending, or hold fast as they are ascending. At the bottom of the stairs I found the same old steam-organ playing away as fast as usual, or perhaps faster than usual, for they had just put some coals on; also the usual penny shows, where you could see twenty views for that sum, all being of the most miscellaneous character, and painfully unartistic.

Emerging from the tunnel, we passed through a labyrinth of narrow streets, full of butchers' shops, where they seemed to sell no smaller joint than a whole quarter of a cow or half a sheep, till at last we came to the dock gates. These ponderous masses of wood and iron, to which the gates of Troy were but as wickets, used formerly to be moved with great labour, and to the loud-sounding voices of the labourers; now, however, they swing to and fro with the ease of a well-hung drawing-room door, and one man directs their movements with the slightest touch of his hand. The hydraulic press does all this, and a marvellous improvement it is upon the old pulley-hauling system.

Immediately on passing over the gates, we came upon a heap of apparent rubbish, which I, nevertheless, examined. I was pleased to find it a small hill composed of stones from a volcanic formation. Among the heap I found numerous specimens of cinder-like stones, showing numerous air-bubbles in their substance, not unlike pumice-stone or slag from a glass or iron factory. These, however, were decidedly of a volcanic origin, and it was amusing to see the little air-bubbles come spinning up to the top of the water when unceremoniously displaced by the fluid getting into their innermost hiding-places. There were also lumps of more solid volcanic stones, and on them small crystals, shining like mica. Besides the black stones, there were some red-coloured ones, also full of holes, which holes were lined with a beautiful thin white material, like egg-shell, on fracturing. One of these stones was discovered to be a brilliant pebble of quartz, and doubtless this egg-shell-like substance was the remains of other pebbles which had become decomposed by time or heat. On the outside of most of the stones were traces of their once