PROCEEDINGS
OF THE
GEOLOGISTS' ASSOCIATION.

ADDRESS
AT THE OPENING OF THE SESSION, 1880-81.
NOVEMBER 5, 1880.
BY THE PRESIDENT,
PROF. T. RUPERT JONES, F.R.S., F.G.S., &c.

THE GEOLOGISTS' ASSOCIATION : ITS ORIGIN AND PROGRESS.

One of the Founders of this Association, our esteemed friend and fellow-worker, the Rev. Thomas Wiltshire, writing to me in March last about the pleasant meeting we had at our *Memorial Dinner*, on the occasion of the Association having flourished for twenty-one years, and thus attained a "Legal Majority," made the following remark :—

"How different was the condition of affairs in the winter of 1858, when three or four people met together at the Working Men's College, in Great Ormond Street, to consider whether a small society could not be formed to discuss in a very modest way geological matters."

This led me to enquire further into the history of the Association—its beginning, its intentions, and its results; and, little having been printed in a continuous or connected form on this subject, I thought it would not be without interest to put together some notes on the views, endeavours, and progress of our Society, and that possibly some suggestions might arise among us for the furtherance and widening of our aims and aspirations.

In preparing these remarks on the early history of the Geologists' Association, I have been courteously assisted by the loan of Reports, Circulars or Notice-papers, and other memoranda, by Mr. Wakefield, Mr. George Potter, Mr. J. Slade, the Rev. T. Wiltshire, Prof. Tennant, Mr. Lobley, Mr. Hopkinson, and other members.

In August, 1858, there appeared in the "Geologist" of that date (at page 356) a letter, headed "Proposition for an Association of Amateur Geologists," and signed, "W. J. Haywood." It runs thus: "Sir,—I take the liberty of submitting to your consideration, for approval or otherwise, the suggestion of the advisability of young geologists (*i.e.*, young as regards their progress in the science) forming themselves into a society. If you approve of this suggestion, will you be kind enough to give it publicity in the correspondence column of your periodical? The best reasons I can adduce in support of this idea are the circumstances of my own case as a solitary student of the science. About four years ago, a perusal of Lyell's 'Elements' led me to perceive that geology was nothing less than a study of the physical history of the globe, and of the races that have successively inhabited it. Since that time I have studied the other works of Lyell, and also those of Buckland, Mantell, Miller, Page, Ansted, &c.; and this amount of theoretical knowledge, with the results of a few rambles in the Thames basin, and along the sea-coast from Ramsgate to Brighton, is all that I can boast of. I have never been able to meet with a single individual with whom I could exchange a dozen thoughts upon geology. Sometimes, indeed, I have thought that I never should be able to enjoy that pleasure; but the mere fact of the publication of the 'Geologist' is an evident proof that geology is more generally studied than I thought it was. Besides, my circumstances are such as to prevent me not only from obtaining such works as Murchison's 'Siluria,' Agassiz's 'Poissons Fossiles,' &c., but also from taking long journeys, or spending much time in the country. There are also many maps which I should like to study, but which I cannot afford to buy. Now, Sir, I doubt not there are many young men in London whose individual cases in many respects resemble mine, and were we to form a society, meeting at stated periods, we could compare notes, give account of our rambles, examine one another's fossils and minerals, exchange duplicates; whilst the subscriptions would purchase maps and books such as individually we could not

obtain ; and in many ways we could be of great assistance one to another. I throw out the suggestion in a very general manner, this not being the proper occasion for entering more minutely into details ; but, hoping that the idea itself will meet with your approbation, I am, Sir, yours, W. J. HAYWOOD."

The Editor appended the following statement :—"To this proposal for the association of young geologists we are disposed to give our assistance ; but we should have liked to have placed something more definite before our readers, and for this purpose we wrote direct to the author of the suggestion. From some informality or incorrectness in the address our letter has been returned to us from the post-office. We can, therefore, only express our sympathy in the project, and say that we shall be happy to be the medium of communication until definite arrangements are made by the suggester and others for carrying it out."

In the September number of the "Geologist," at p. 401, the Editor states that he has "received letters for Mr. Heyward [*sic*], but cannot forward them, not knowing that gentleman's address."

In October of 1858 the "Geologist," page 446, contained a note signed "RAC-HAC," saying, "I should very much like to be a member of the proposed 'Amateur Geological Association,' and trust to hear much more about it in your next number."

At page 449 of the same number of the "Geologist" is the following note, headed, "Society of Amateur Geologists," and signed, "Geo. S. Penson" :—"Dear Sir,—I read with pleasure the proposition for an Association of Amateur Geologists in a late number of your 'Geologist.' This is a thing I have long been wishing for ; indeed, at the time of reading it, I had an unfinished letter upon the very subject, which I intended sending to you, but which was rendered unnecessary by the appearance of the one under consideration. I am in exactly the same position as Mr. Heyward as regards isolation, time, means, &c., and should therefore hail as a great boon the formation of such a Society, and should be most happy to unite with him in the carrying out of his excellent project. If he will oblige by furnishing me with his address I will communicate with him at once upon the subject."

At page 450, in the same Number of the "Geologist," the Editor repeats that he cannot forward letters to Mr. Heyward, not knowing his address.

In the same month (October, 1858), Mr. J. E. Wakefield (of the

Metropolitan Board of Works), and the late Mr. E. Cresy, at that time Assistant-Secretary to the Chairman, or Clerk to the Board, interested themselves in this proposed Society of Amateur Geologists. Mr. Wakefield, volunteering his services, received the letters for Mr. Heyward, and undertook the necessary correspondence. He wrote to Mr. G. S. Penson (above-mentioned), Mr. H. H. Groser, Mr. George Potter, Mr. J. E. Saunders, Mr. W. W. Armstead, the Rev. T. Wiltshire, Mr. J. Toulmin Smith, and others, all of whom readily agreed with him in the advisability of getting together a meeting of Geologists for the purpose of forming this Society of Amateurs.*

Consequently, as a first step, Mr. Wakefield, Mr. Slade, and Mr. G. Potter, being warmly interested in this contemplated organisation of geological enquirers on an economical plan, met together at Mr. Wakefield's house, Meadow Cottage, Highgate Rise, Kentish Town, on November 17, 1858. Mr. G. Potter, above-mentioned, was a resident in Highgate, and acquainted with Mr. N. T. Wetherell, Mr. J. Toulmin Smith, Mr. J. Slade, and other geologists of his neighbourhood; and heartily acquiescing in Mr. Wakefield's earnest desire to follow up the suggestions given in the "Geologist" of October, above quoted, used his best endeavours in promulgating the idea. Mr. J. E. Saunders had interested the Rev. T. Wiltshire in the project; and Mr. Slade communicated the design to Mr. F. J. Furnival among others, and he also took it up with enthusiasm. Altogether the names of about forty willing friends were numbered as being in favour of the projected Amateur Society or Association of persons interested in geological studies, and desiring to seek mutual help as learners. They were invited to a meeting, and to form a Committee. Most of the invitations were accepted, and the conference was held on Monday evening, November 29, 1858, at 2, Upper Wellington Street, Strand, where Mr. Wakefield's influence obtained the use of a large room. A unanimous desire to found and support the proposed Society was expressed, and a Provisional Committee was appointed.

There were present at this meeting :—The Rev. T. Wiltshire, M.A., F.G.S. (in the chair), J. Toulmin Smith, E. Cresy, F. J. Furnival, M.A., S. J. Mackie, F.G.S., F.S.A., J. E. Saunders,

* Mr. Wakefield has favoured me with Letters and Minutes affording much information of this date; and Mr. Slade and Mr. G. Potter have kindly given me notes of their reminiscences of the time.

F.G.S., W. Hislop, F.R.A.S., John Grant, Thomas Lovick, J. Slade, F.M.S., T. A. Phillips, C. J. Morgan, W. Armstead, G. Potter, — Davis, J. S. Penson, J. E. Wakefield.

The Provisional Committee consisted of:—The Rev. T. Wiltshire, Mr. Penson, Mr. Slade, Mr. Cresy, Mr. Toulmin Smith, who was chosen Chairman, and replaced by Mr. G. Potter. Mr. Hislop was to be Treasurer, Mr. Wakefield, Hon. Secretary, and Mr. Toulmin Smith, Chairman.

Among those who entered as Members in 1858, but do not appear to have been present at this meeting, are—Professor Tennant, Hyde Clarke, A. Bott, R. Middleton, G. Perry, and W. Newall. Of country members of that date we still have James Plant (Leicester), J. Bentley (Market-Deeping), W. Curtis (Alton), F. Gotto (Leighton-Buzzard), and G. Dowker (Wingham).

On December 2nd, 1858, at three p.m., the Provisional Committee met at the Working Men's College, 45, Great Ormond Street, where, with the help of Mr. Furnival, they had the convenience of a room for their meeting. There were present—Toulmin Smith (in the chair), Rev. T. Wiltshire, Mr Hislop (Treasurer), Mr. Slade, Mr. Cresy, Mr. Wakefield (Hon. Sec.). They decided, among other resolutions, that the name of the Society should be "The Geologists' Association," and that a prospectus (1,500 copies) should be printed and circulated among the members of the Association and of the Palæontographical Society; and that an advertisement should be inserted two consecutive weeks in the "Athenæum."

The Prospectus, thus drawn up, printed, and distributed, was dated December 6, 1858. It was issued with the "Geologist" of January, 1859 (No. 13, vol. ii), as a fly-leaf at the end of the Number. For a knowledge of this prospectus I am especially indebted to Mr. J. E. Wakefield; and I may be permitted to add that I am assured that the main prop of the young Association during this trying period was our respected friend here mentioned, whose sturdy business habits kept the Members well together.

Among the earliest *printed notices* concerning the foundation of our Society, besides the Prospectus itself, is a paragraph in the January number of the "Geologist" for 1859, referring to the movements already set on foot, and reproducing the greater

part of the Prospectus which appeared on a fly-leaf in that number.

As the Prospectus and some other notices are not published in the Minutes of the Association's Proceedings, I give them here at length.

The Prospectus is headed "The Geologists' Association," and states that—

"There is no branch of Science which attracts so general—it may be said so popular—an interest as GEOLOGY; but it has been felt for some time that there is much need of a common means of intercommunication among those who, while not devoting their lives to the pursuit, yet take an active interest in its facts and teachings. The Geological Society is too far advanced in the strict course of scientific method and treatment to be found available by the increasing numbers of those who desire modestly to seek mutual help as learners, but shrink from the assumption of ranking themselves among the illustrious Professors and Masters in the Science.

"To meet this want, a number of gentlemen have organised themselves into a *Geologists' Association*, having for its special purpose the providing those means of intercommunication and mutual help.

"It is proposed to hold regular Meetings; to form a Museum of typical specimens; to afford facilities for the Collection and Exchange of specimens and for rectifying doubtfully named ones; to communicate information as to the best methods of search, localities, etc., which the experience of Members may enable them to interchange; and, in general, to enable the practical student in Geology to find a congenial place where doubts may be stated and experience exchanged; and so the pursuit of this interesting and invaluable branch of inquiry be at once made pleasanter, and freed from some of the difficulties which now attend the pursuit of it, both by individuals and localised Institutions.

"The Association will embrace Members both in town and country, its objects and usefulness being equally available by those in each, with the exception (in the latter case), of course, of the general opportunity of personal attendance at the Meetings.

"The subscriptions have purposely, and with deliberate consideration, been fixed at a rate which will exclude none from the

benefits it can give. The subscription for Town Members is *ten shillings* a year; for Country Members, *five shillings* * a year. All Members will be entitled to copies of whatever printed Minutes of the Proceedings of the Association are issued.

"The first Meeting of the Association for business will be held on an early day in January next, which will be duly announced to Subscribers, and when an Inaugural Address will be delivered by the Chairman.

"The Meeting to settle the Rules of the Association will be held on Friday, the 17th December inst., at No. 2, Upper Wellington Street, Strand, at seven o'clock in the evening *precisely*, when the attendance of all Subscribers is requested. In the meantime, it is requested that the name and address of persons wishing to join the Association may be sent (see annexed form †) *before Monday, the 13th December inst.*, to either of the under-mentioned.

"Toulmin Smith (Chairman), Highgate, N.

"William Hislop, F.R.A.S. (Treasurer), 108, St. John Street Road, E.C.

"J. E. Wakefield (Hon. Secretary), Meadow Cottage, Highgate Rise, N.W.

"*London, Dec. 6, 1858.*"

The Provisional Committee next met (at 2, Upper Wellington Street, or at the Working Men's College), on December 16, 1858. Present—J. T. Smith (Chairman), T. Wiltshire, E. Cresy, W. Hislop, J. S. Penson, J. E. Wakefield.

The Prospectus had been distributed among the Members of the Association, the Palæontographical Society, the College of Preceptors, and some of the Local Societies in union with the Society of Arts, and about 100 applications for Membership had been received. The draft Rules, &c., were considered.

The same members of the Provisional Committee met also the next day, December 17, 1858, at Upper Wellington Street (?). The drafts of Report, Rules, &c., were further considered, previous to being laid before the General Meeting in the evening.

* Subsequently increased to 10s. Country Members were at first to be regarded as only "Corresponding Members;" but this plan was soon improved upon.

† Omitted here.

The First General Meeting.—In pursuance of the Resolution made at the Meeting held on 29th November, 1858, a General Meeting was held on Friday evening, 17th December, at No. 2, Upper Wellington Street, Strand, Toulmin Smith, Esq., in the chair.

The following Reports were received from the Provisional Committee and accepted, namely—on the Prospectus; on the Place of Meeting; on the Laws of the Association; Appointments of Officers, &c., and Resolutions were made thereon. Toulmin Smith was to be the President of the Association; W. Hislop to be the Treasurer; Messrs. Wakefield and Cresy * to be Honorary Secretaries. Charles Woodward, N. T. Wetherell,* T. Wiltshire, and J. Le Capellain * to be Vice-Presidents. Hyde Clarke was added to the Vice-Presidents January 11, and J. Carter, January 20, 1859.

The under-mentioned were to constitute the Committee:—J. E. Saunders, F. J. Furnival, S. J. Mackie, Thos. Lovick, J. Grant, W. N. Lawson, H. T. Kempton, W. T. Rickard, J. Carter, John Pickering, Hyde Clarke, J. L. Shuter. H. Dean was added January 11, and E. Cresy, January 20, 1859.

The second printed notice of the meetings that I find is on the last page of the January number of the “Geologist,”† 1859, and is not printed in the Association's Proceedings. It refers to this General Meeting, and runs thus—

“GEOLOGISTS' ASSOCIATION.—A meeting was held at No. 2, Upper Wellington Street, Strand, on Friday evening, the 17th December, 1858, for the purpose of organising a new Society to promote the Study of Geology and its allied Sciences.

“The means proposed are the holding of periodical meetings for reading and discussing papers and the exhibition of specimens; arrangements for the facilitating the exchange of specimens between distant members; the formation of a typical collection of fossils suited to the wants of students; the establishment of a library of reference; and the delivery of short courses of lectures.

“It was announced in the course of the proceedings that 120 applications for membership had already been received.

“The first meeting for actual work will take place early in

* These resigned their appointments soon afterwards.

† Vol. ii., No. 13, January, 1859, page 48.

January [1859], when an inaugural address will be delivered by the President [Mr. J. Toulmin Smith], and more detailed plans will be stated."

The General Committee met on Monday, the 3rd of January, 1859, at No. 45, Great Ormond Street. Present—Wiltshire (in the chair), Saunders, Hyde Clarke, Hislop, Wakefield. 1,700 revised prospectuses had been printed, and 1,250 of them sent for insertion in the "Geologist." The Library of St. Martin's Hall had been engaged for the first Ordinary Meeting. The Laws had been printed; the Forms of Application, &c., were to be prepared, and other Resolutions were made.

The General Committee met again on the 11th January at Great Ormond Street (?). Present—T. Smith (in the chair), Wiltshire, Pickering, Lawson, Lovick, Hislop, Wakefield, and Rickard. Various necessary resolutions were passed.

It is very evident that the energetic intercommunication of the earnest geologists concerned—bestirring themselves to let friends and well-wishers know of the good and thoughtful plan set afoot to bring men and their notions together on a plain and unpretending geological platform—was very successful. This success in their wishes was especially forwarded by the friendly co-operation of many members of the Palæontographical Society of London, who, at the instance of the Rev. T. Wiltshire, readily fell in with the views of the founders of a society so nearly related to, and so favourably constituted for, their own scientific objects and pursuit.

The First Ordinary Meeting of the Association was duly convened on January 11th, 1859, in the Library of St. Martin's Hall, and the doings and sayings are reported in No. 1 of the "Proceedings," and at page 95 of the "Geologist," vol. ii., 1859.

Several new members were enrolled, an Inaugural Address was given by the President, and it was stated that "within six weeks after the first conference on the subject not less than 150 gentlemen, many of them well known in connection with Geological Science, had applied for membership."

The President (Mr. J. Toulmin Smith*) spoke of the objects and advantages of the Society, and of plans for promoting and

* He resigned the Presidency on Feb. 8th, and was succeeded by the Rev. T. Wiltshire.

facilitating the collection and exchange of specimens, and for forming a good and really typical collection of fossils, for which several specimens had been already promised. He also spoke of the right naming of fossils, and against the undue use of long Latin and Greek words. Nor must we forget that he insisted upon the recognition of the "fundamental Law of Unity,* which underlies all the phenomena of Nature, as being absolutely necessary to right conclusions," and that careful observation, checked by comparison with results arrived at by others, is the only foundation for "Good Facts" and for the riddance of Falsities. Much, therefore, he observed, could be obtained by action on the *Mutual* principle of the Association.

The General Committee met at Upper Wellington Street on January 20, and again at the same place on February 8, when they adjourned until after the Ordinary Meeting in the evening, and then they met again.

At the Second Ordinary Meeting,† held at the Library of St. Martin's Hall, February 8th, 1859, Dr. Hyde Clarke (Vice-President), "sketched out a plan for the organisation of local committees in conjunction with the Association, by which the work of the Government Surveyors, and others labouring in the geological field, might be usefully followed up, and supplemented by the bringing together of new facts, as local circumstances might favour their collection.

"He believed that much remained to be done in more minute classification of the strata, &c. by local researches, and that much good was to be effected by announcements of new minerals, particularly such as would be useful as manures, for building materials, or in connection with the manufactures, as well as by notice of such operations as new mines, quarries, wells, pits, railways, roads, tunnels, &c.; of landslips, observations on springs, on thermal, superficial, and subterranean waters; electro-magnetic observations on mineral bodies; earthquakes in particular districts; the rates of erosion on shores and of new depositions; the like of river operations; of recent and ancient abrasions; and many other particulars which would be not only interesting as bearing on points of

* For a late eloquent exposition of the "Unity of Nature," see the Duke of Argyll's memoir in the "Contemporary Review," September, 1880.

† See the "Geologist," vol. ii., p. 169; and the "Proceed. Geol. Assoc.," vol. i., p. 4.

theoretical geology, but as likely to throw light on questions of great practical and economic importance.

"He adverted to the valuable services which had been rendered to the science by ladies, and mentioned several whose names were well known as accomplished geologists."

Succeeding Ordinary Meetings produced Papers of considerable interest, which were either briefly reported in the Proceedings or printed in full as separate Memoirs; and at the end of the year the First Annual Report, presented to the meeting on January 2, 1860 ("Proceedings," vol. i, p. 25), not only showed very satisfactory results for the year 1859, but defined the aim and scope of the society.

"The success of the Association has exceeded the expectations of its promoters. Originally founded with the view of placing the Science of Geology in the hands of that large class who have neither the time nor the money necessary for mastering the subject and becoming Fellows of the Geological Society of London, it has been assisted and encouraged by many well-known names, who have become Members not so much for the sake of the benefit they might themselves derive as for the aid they could impart to others.

"In the original prospectus it was stated that the Association would endeavour to promote the reading of papers, the giving of lectures, the formation of a typical collection of specimens, the exchange of fossils amongst the members, and the gathering together of sound geological books.

"In all these matters the spirit of the Prospectus has been carried out as far as the funds would permit."

In the meantime, suggestions had been made in the "Geologist" of August, 1859, vol. ii., p. 329, in a letter signed "Provincial Geologist," that a Field-Meeting should be held by the Members at least once a year, with special papers and discussions; and at page 368 of the same volume a letter from the Rev. T. Wiltshire announced that the Committee acceded to the proposition—at all events as far as settling to have one summer-day Geological Excursion in 1860.*

In both April and June, 1860, there were field-days or excur-

* Members of the Association had already enjoyed some such excursions with the Geological Classes of King's and University Colleges, under the guidance of Professors Tennant and Morris.

sions (to Folkestone and Maidstone), accordingly. They were not mentioned in the "Proceedings," but were noticed in the "Geologist," vol. iii., p. 271; and the fact of the excursions having been thrown open to the friends of the Members was commented on as evidence of the liberal enlightenment of the Committee. Charlton also is mentioned in "Proceed.," vol. i., p. 64 and 89, and in a Notice-paper, dated "May, 1861," as having been visited in 1860. In the autumn (October 15th) of 1860, a notice-paper stated that—

"The experiment of conducting Field-Lectures, which was made last summer, having appeared to give considerable satisfaction to the Members, the Committee propose to continue those Excursions on Whit-Monday, May 20, 1861."

In 1861 there were three Excursions—to Redhill and Reigate (April 9); Oxford (May 20); and the Isle of Sheppey (August 1); all reported in "Proceedings," vol. i. Subsequently long excursions, single field-days, and intervening visits to places nearer London, became common, were well attended and highly appreciated (see Notes on Excursions further on).

A Circular or Notice-paper, dated "May, 1861," states that—

"This Association, which has now been in existence for three years, was originally formed with the view of promoting the study of Geology, and affording a common means of intercommunication with those who, while not devoting their lives to the pursuit, yet take an active interest in its facts and teachings. The 'Geological Society,' it was felt, was too far advanced in the strict course of scientific method and treatment to be found available by the increasing numbers of those who, desiring modestly to seek mutual help as learners, shrink from the assumption of ranking themselves among the illustrious professors and masters of the science. The Geologists' Association has endeavoured to carry out this object by the reading of Papers, the delivery of Lectures, the exchange of Fossils among the Members, the formation of a Library and of a Typical Museum for reference, and the dissemination of the knowledge thus acquired by its printed Proceedings. In addition to these varied means of usefulness (in all of which the Association has met with very great success), it has also from time to time conducted Excursions to places of geological interest, which have proved eminently valuable in bringing the facts of Geology prominently before the student, and illustrating in an attractive form the practical portion of the Science."

It goes on to state that—

“The whole of the Lectures * and Papers read before the Meetings, together with some detached ones, have been furnished gratis, and free of postage, to every Member; that the nucleus of a Library of standard geological works has been formed; that the number of Typical Fossils already accumulated is far too great for the limited amount of cabinet-room at the disposal of the Association;” and that “it will be at once seen [that] the Geologists’ Association offers many advantages.”

The chief points of the above are repeated in the Circular or Notice-paper of January 5, 1863, the *Discussion* of the subject-matters of Papers being the only other point alluded to.

In the printed Laws † of December 17, 1858, the intentions of the Society are indicated by the fact that the General Committee may be sub-divided into the following and other Sub-committees:—

1. Corresponding Committee: To communicate with Members as to the Exchange of Fossils and the Supply of Specimens for the Museum. (Messrs. Rickard, Lawson, Wiltshire, Potter, and Allen; January 20, 1859.)

2. Museum Committee: To have charge of the Museum and the arrangement of Specimens, and to facilitate the naming and describing of Specimens.

3. Press Committee: To correspond with local and other Journals with a view to the dissemination of the objects of the Association, and the promotion of its interests by the publication of its Proceedings. (Messrs. Mackie, Lawson, and Cresy; January 20, 1859.)

4. Papers and Lectures Committee: To make arrangements for and examine Papers to be read before the Association. (Messrs. Wiltshire, Pickering, Mackie, and Clarke; January 20, 1859.)

5. Library Committee; To promote the formation of a Library of reference, and to have charge of the same.

6. Finance and House Committee: To carry out instructions with reference to accommodation for Meetings, etc., and such other

* Probably not the *Courses of Lectures*, but memoirs, or long papers.

† The Laws or Rules of the Association were first drawn up on December 17, 1858. They were amended February, 1859 (see “Proceed.” i., p. 3 and 5); recast in 1864 (see Annual Report for 1863); recast again in 1872 (“Proc.” ii., p. 321, &c.); amended January, 1875 (“Proc.” iv., p. 203); and there have been some subsequent modifications.

matters as involve the outlay of funds. (Messrs. Hislop, Grant, Kempton, and Saunders; January 20 and afterwards, 1859.)

This was the theoretical plan of a perfect distribution of work among members of the General Committee. In practice the General Committee, for the most part, have worked out these matters in detail as occasion required, referring for advice to those, present or accessible, best adapted to give it.

According to the Laws of the Association, as printed in 1864,* the Members contemplated—"That the object of the Association be to facilitate the study of Geology and its allied Sciences by the Reading of Papers, the Delivery of Lectures, the Formation of a Library, and the Publishing of Proceedings."

After these variations, the Law relating to the aims of the Association took the following form in 1872:—"That the object of the Association be to facilitate the study of Geology and its allied Sciences by the holding of Meetings for the Reading of Papers and the delivery of Lectures; by Excursions, the Formation of a Library, and the Publishing of Proceedings."

Thus we see that, by the year 1864, both the intention of forming a "Collection of Typical Specimens," and the notion of the "Exchange of Specimens," had fallen away, and that these were no longer recognised in the printed "Rules" as attainable objects. Nevertheless, it may be well to examine the history of these failures of intent, whilst we follow, as far as our limits allow, the success of other views and aims of the Association.

A collective view of all the aspirations of our body, whatever have been their several results, cannot but prove of interest to us; and the carrying out of these intentions from time to time comprehended several branches of a system of work, a knowledge of which can be gathered by a study of successive official or non-official statements, as well of intentions and aspirations as of methods and plans, brought before the notice of the Members.

Thus, from the sources above indicated and quoted, we find that the Founders, and many of the successive Committees of the Association, contemplated the cultivation of geological knowledge among the Members by means of *mutual help*, variously given and received, under the following heads:—

* In the Annual Report for 1863, published in 1864, we find that—"During the past year [1863] the Association has steadily progressed in the direction of its proper position, that of an Amateur Society."

I. Periodical Meetings :—Having in view—

1. Reading and Discussing Papers communicated by the Members.
2. Exhibition of Specimens with view of (*a.*) introducing New Fossils, Minerals, Rocks, &c., (*b.*) obtaining or rectifying Names.
3. Exchange of Specimens among the Members.
4. Giving and receiving information as to (*a.*) the Best Localities for fossils, (*b.*) the Best Methods of search and collection.
5. Dissemination of Geological Knowledge by printed Proceedings, separate Memoirs, and Notice-papers.

II. A Library of Reference.

III. A Museum of Typical Fossils.

IV. Field-lectures, or Excursions.

V. Courses of Lectures.

VI. Local Committees.

I propose to say a few words on each of these headings, as indicating the intentions and hopes of the Committees and Members, whether expressed by them officially or otherwise, and whether still contemplated by the existing Laws or not; and also to refer to some other points in the history and constitution of our Society which appear to me to be deserving of remark in view of our progress and the carrying out of what we have to do as Associated Geologists.

I. *Meetings*.—These were just at first limited to Town Members, Country Members being at that time only Corresponding Members; but at a very early date (March 8th, 1859) Country Members were admitted also—a wise and, of course, necessary arrangement.* Eminently field-workers, at home in the quarries and local sections, the Country Members are requisite for the bringing of fresh material for observation and thought to the dry, museum-working Londoners, who go foraging only occasionally for fossils. What would the House of Commons be without the Country Members? How could Imperial politics be perfect without Rural Constituencies? Luckily the short-sightedness (almost the only example) in the early counsels of the Founders

* In the Report of 1864 it is stated that the Meetings had been attended in the past year by a larger proportion of Country Members than had been present in former years.

of shutting out so large a number of willing Geologists from the Meetings—the recognised “Exchange” of Thought—was soon remedied; and we can be oppidans or rurals just as we like.

After its establishment by General Meeting at Upper Wellington Street, in December, 1858 (Toulmin Smith, President), the Ordinary Meetings of the Association were held in the Library of St. Martin's Hall, at first on the second Tuesday in each month (Jan. 11, Feb. 8, and March 8, 1859), and afterwards on the first Monday of each month (April 4, May 2, June 6, &c.); the Rev. T. Wiltshire, President, and J. E. Wakefield, Hon. Secretary.

1860-1. The Meetings were held at No. 5, Cavendish Square: the Rev. T. Wiltshire, President; W. N. Lawson, Hon. Sec.

1862. The Meetings were held at No. 5, Cavendish Square: Prof. J. Tennant, President; W. N. Lawson, Hon. Secretary.

1863. The Meetings were held at No. 5, Cavendish Square: Prof. J. Tennant, President; J. Cumming, Hon. Secretary.

1864-5. The Meetings were held on the first Tuesday of each month, at 32A, George Street, Hanover Square: E. Cresy, President; J. Cumming, Hon. Secretary.

1866, January to March, at George Street, Hanover Square; April to December (at 8 p.m. instead of 7 p.m.), at King's Coll., Strand, Dr. C. T. Richardson, Pres.; J. Cumming, Hon. Sec.

1867. January to March, at King's College; on and after April 5, on the first Friday of the month,* at University College: Dr. C. T. Richardson, President; J. Cumming, Hon. Sec.

1868-9-70. At University College: Prof. J. Morris, President; J. Cumming, Hon. Secretary.

1871-2. At University College: the Rev. T. Wiltshire, President; J. L. Lobley, Hon. Secretary.

1873. At University College: Dr. H. Woodward, President; J. L. Lobley, Hon. Secretary.

1874. At University College: Dr. H. Woodward, President; W. H. Hudleston, Hon. Secretary.

1875-6. At University College: W. Carruthers, President; W. H. Hudleston, Hon. Secretary.

* “Annual Report” for 1866, page 8. In the palæozoic, as in a more recent, period of the Association, at Cavendish Square and at University College, much catclysmic action prevailed among its members, schistose cleavage, or a splitting-off, being largely developed; but strong breccias were recemented, and many Members have continued throughout.

1877-8. At University College: Prof. J. Morris, President; Dr. J. Foulerton, Hon. Secretary.

1879-80. At University College: Prof. T. Rupert Jones, President; Dr. J. Foulerton, Hon. Secretary.

Here we enjoy the use of a fine, large, and convenient apartment for our Meetings, thanks to the courtesy of the Authorities of the College; also a room for our Committee. I must say, in passing, that I venture to think that the Committee should give themselves more time (by beginning earlier) for their increasing work, and thus ensure punctuality in opening the Evening Meetings.

I. 1. *Papers and Discussions*.—With regard to the Reading and Discussing of Papers, we have to look at an important matter, namely, the nature and character of the Papers communicated to the Association.

In 1860 a Report stated that—

“The Committee would earnestly call attention to the fact that one of the main objects of the Association is the diffusion of a spirit of enquiry, among the Members, on Geological subjects; and that in no way can this object be better promoted than by the Members communicating short papers for the Monthly Meetings. The Committee would add, that in a society like the Geologists’ Association, which comprises many persons who seek only to be students in the science, it is neither necessary nor desirable that the Papers should be always the fruit of original investigation, or should in every case embrace the discussion of points of novelty; communications placing the ascertained results of the labours of others in a compendious form would not be without use.”

In no case has this last observation been illustrated more markedly than in a paper on the *Echinidæ* of the Chalk, communicated (Oct. and Nov. 1859) by the late Mr. E. Cresy, one of our Founders, in which “he particularly denied all claim to originality, his only merit being that of having collected into one view materials which lay scattered in a number of rare and costly works.”—(See the “Geologist,” vol. ii., p. 489, December, 1859.) Thus, as well by this kind of classificatory work, as by original notes, highly useful results are arrived at. In 1859 Mr. Hyde Clarke in an address to the Association gave it as his opinion that “Good facts were to be got at by the observations of the Members being brought forward at the Meetings (instead of being buried in Note-books), and there discussed and compared, and then, if good,

added to the common stock for the use of science, and for the production of knowledge fit for practical application."

In accordance with what has been stated above, we find that the communications made to the Association are broadly divisible into two kinds:—1st, those in which the authors give *résumés* or summaries of discoveries and conclusions already arrived at, and go over old ground, pointing out various subjects and points of interest—and under this heading the reports of visits made by the Associates to special localities and to geological museums are not the least in importance; and 2ndly, those papers which offer original information. The Association may well be proud of many such papers, of both classes, that have been read at the Meetings and published in the Proceedings.

It would be invidious to mention the titles of any such papers in particular. Good and useful as the majority of these are, other communications remain enumerated in the Annual Reports by title only, owing to the want of pecuniary means at one period of the Association's existence. For instance—Papers read in 1865:—

Early Geologists and their opinions, by the Rev. T. Wiltshire.

Geological Evidences of the existing domesticated Animals, by C. C. Blake.

Note, No. 3, Microscopic Geology, by W. Hislop. (Printed afterwards, "Proceed." i, p. 386.)

Notes on New-Scotland and New-Brunswick, made in 1864, by E. Cresy.

Excursion to the Isle of Wight, by W. H. Leighton.

Geology of the neighbourhood of Balmoral, by J. Crombie.

Geology of the neighbourhood of Farringdon, by C. Evans.

The Sussex Earthquake of April 30, 1864, by Capt. Noble.

Excursion to North Wales, by A. Bott.

Shingle Banks, by C. Tomlinson.

See also the lists of papers read in the five succeeding years, 1865-69, in the respective Annual Reports.

The Proceedings from January, 1865, to February, 1870, were not published by the Association.* Some notes and reports, however, belonging to this period are to be found in the "Geological Magazine" thus;—

* The first volume of the "Proceedings" ends with the Minutes of Proceedings at the Conversazione on January 24th, 1865; and vol. ii begins with the Minutes of the Ordinary Meeting on February 4th, 1870. The

"Geol. Mag." vol. iv., 1867, p. 561, Nov. 1, Cephalopoda, by the Rev. T. Wiltshire (abstract); vol. v., 1868, p. 33, Dec. 12, 1867, Crustacea, H. Woodward; vol. vi., 1869, p. 331, June 2, Excursion to Guildford, C. J. Meÿer; p. 427, Aug. 2, Excursion to Hunstanton, Prof. Morris; vol. vii., 1870, p. 91, Dec. 3, 1869, the Huelva Mining District in Spain, S. R. Pattison.

Other notices occur in Mackie's "Geological and Natural-History Repertory," 1867 thus:—

Proceedings of the "Geologists' Association" published as part of the "Geological Repertory," 1867; a fragment:—

Proceedings of Societies—

I. On the Past, Present, and Future of Geology. By C. T. Richardson, M.D. (Address, 6 Feb., 1866.) Page 1.

II. On the Geological Evidences of the Present Domesticated Animals. By C. C. Blake. (Read 7 Feb., 1865.) P. 6 (also at page 1 of another issue).

III. On a Specimen of *Lepidotus Fittoni*. By Arthur Bott. (Read in 1866.) P. 12.

IV. Notes on the Starr Hills of the Lancashire Coast. By John Rofe. (Read in 1866.) P. 13.

V. On Certain River-bars and Lagoons on the Coast of New Zealand. By R. J. L. Guppy. (Read in 1866.) P. 16.

VI. The Sussex Earthquake of April 30, 1864. By Capt. Wm. Noble. (Read in 1865.) P. 21.

method and extent of the early "Proceedings" are best shewn by the following Table:—

PROCEEDINGS OF THE GEOLOGISTS' ASSOCIATION, VOL. I.

	No.	1.	Session 1859-60	pages	1-10
The Covers are missing or were not issued.	"	2.	" "	"	11-18
	"	3.	" "	"	19-24
	"	4.	" "	"	25-48
	"	5.*	" "	"	49-64
	"	6.	" 1860-61	"	65-116
	"	7.	" 1861-62	"	117-168
The Covers are marked "Vol. I." and "5, Cavendish Square."	"	8.	" "	"	169-246
	"	9.	" 1862-63	"	247-312
The Covers are marked "Vol. I." and George Street, Hanover Square."	"	10.	" 1863-64	"	313-372
	"	11.	" 1864-65†	"	373-420

* This No. begins with the Proceedings of April 2, 1860.

† The Proceedings (Conversazione) of January 24th, 1865 are the last in this No. The Title page of vol. i. is also dated 1865. The Index was made, I am informed, by Mr. Lobley, the Editor in 1871, who began the second volume, and completed vol. i, with the Index, so that it could be bound-up.

VII. On the Arenig and Llandeilo Groups. By H. Wyatt-Edgell. (Read in 1866.) P. 24.

VIII. On an Excursion to the Isle of Wight. By W. H. Leighton. (Read in 1865.) P. 28.

IX. Sketch of the Geology of Farringdon. By C. Evans. (Read in 1865.) P. 33.

X. Speculations on Possible Physical Causes for the Alterations of the Earth's General Climate and Atmospheric Temperature. By S. J. Mackie. (Read in 1866.) Only 5 lines, p. 40.

Moreover several Memoirs were printed separately at the cost of the Association, especially between 1865 and 1870, as Supplemental to Vol. I. of the "Proceedings;" namely—

I. J. Toulmin Smith. The Finding of True Facts. Read 11 January, 1859.

II. Hyde Clarke. On Geological Surveys by Members of the Association. Read 8 March, 1839.

III. Rev. T. Wiltshire. On the Red Chalk of England. Read 4 April, 1859.

IV. N. T. Wetherell. On some peculiar markings on broken surfaces of flints. Read 6 June, 1859.

V. Rev. J. M. Crombie.* The geological relations of the Alpine Flora of Great Britain. Read 7 June, 1867.

VI. Rev. T. Wiltshire.* On the chief groups of the Cephalopoda. Read 1 November, 1867.

VII. C. J. A. Meÿer.* On the Lower Greensand of Godalming. Read 4 December, 1868.

VIII. H. Woodward.* Man and the Mammoth. Read 1 January, 1869.

IX. T. Rupert Jones.* On the Palæozoic Bivalved Entomostraca. Read 7 May, 1869.

X. John Morris. Lead-bearing Districts of the North of England. Read 4 June, 1869.

XI. Reports of Excursions [in 1869]. *Anon.*

XII. C. Evans. On some sections of Chalk between Croydon and Oxted. Read 7 January, 1870.

XIII. G. Dowker. Chalk of the Isle of Thanet. Read 7 May, 1870.

XIV. A. Tylor.* On Quaternary Gravels. From the

* These papers are referred to in the Annual Report 1869 (published in 1870) as having been printed and circulated in that year.

"Quart. Journ. Geol. Soc.," 1869. Reprinted at the expense of the Geologists' Association, as a memoir useful to the Members.

XV. J. L. Lobley. Mount Vesuvius, 1868. Published by Stanford as a separate work, of which Mr. Lobley liberally gave a large number of copies to the Members.

Perhaps the greatest point of divergence between *our* Society and the leading Geological body in England is that the latter deals (for reasons that are unquestionably well founded) in entirely *new* matter. So learned and so leading a body should undoubtedly makes its primary object the spread of new ideas, new theories, and new facts. Its position is such as to make it take the lead in creating and assimilating new matter ; whilst our own more humble efforts, bringing fewer new facts to the front, lead to the grouping of generalities and the distribution of certified knowledge. Our Association thus aims at a different end, not less important nor less useful (I really believe) than that of the Geological Society ;* and by this we can materially aid the general spread of our special Science. As new facts accumulate, new hypotheses, ceasing to be mere conjectures, arrange themselves in the received theories of Geological Science ; and it becomes necessary for some earnest workers to take in hand the successive arrangement of the knowledge acquired, and tabulate, so to speak, the stages that have been reached, and the groups of useful facts of which we have become assured. Now *that* we *can* do. Let the specialists work out the ends they have in view, and do it well. Let it be for us to try, as far as in us lies, to add up their conclusions, and see what the specialists have done, whether they be of our own circle, or belonging to other Societies.

Former Committees of the Association have by no means been negligent in urging the Members to exert themselves to bring forward *their own* remarks, both on things within their own field of observation, and on things thought of and written about by others. Though urging the Members on, and endeavouring to indicate the most advantageous methods of increasing the usefulness and popularity of the Association, yet the successive Committees have wisely left much to individual energy and planning, knowing that

* The Quekett Microscopical Club followed our example in forming itself a junior Society for a field of research in which masters already existed. That well established Society courteously lends us lamps at our soirées.

the institution was not to be too parentally nursed up, nor too stiffly regulated.

The Committee of the time remark that the papers read in 1864 have mostly emanated from the London Members; and appeal to the Country Members for notes and memoranda of the works of the miner, quarryman, and navvy, in their localities. "Your Committee have frequently been struck with the fact, that it is by no means the longest or most elaborate Papers which elicit the best discussions. A few simple observations, either in themselves new, or calculated to throw new light on the labours of former observers, or to controvert or to sustain the theories on which Geologists and Naturalists are at present divided, will often ensure a highly interesting discussion, and stimulate the defenders and opponents of those theories to extend the field of their enquiries, and multiply their experiments and observations, to the benefit of their compeers and to the extension of scientific truth."

In the Annual Report for 1866 (printed in 1867) the Committee state that the appeals to *Country Members* for papers and specimens have not been successful. More *communicating* Members are wanted. It is not expected, they say, that papers should be "entirely new"; and, if they convey information on the allied sciences, they will be also welcome. "We meet (they add) for mutual instruction: not solely to discover new truths, but to study well, and to mutually assist each other in studying, facts already known."

In 1867 there were 229 Members on the list, and several good papers had been read (as stated in the Annual Report for that year); but they had been communicated by "ready friends" in London, and had not come from "the many Members." Again the Committee ask for Papers affording "materials for study and information on the various fields which sub-divide the vast territory of Modern Geology."

Many of the foregoing statements and requests of former Committees are not out of place now-a-days. The excellent and well worked-out papers with which we are often favoured are very welcome, and we are grateful for them; but we want more of the shorter bits of information about local Geology, and stirring *résumés* of known facts.

As regards the practical value of Discussions carried on after

the Papers have been read, doubtless we fully agree with what was found to hold good even in the first year of the Association, as shewn by the Report for 1859 ("Proceedings," vol. i., p. 26, 1860), which states that in such Discussions "various opinions were given and facts noted, useful alike to the Student and the Amateur."

In 1864 the Discussions sometimes occupied more than one evening, being full of interest; and the Report for that year stated that, as a society for mutual instruction, "its discussions show that it is enlisting the sympathies and energies of precisely the class of students which it has sought to enlist in its ranks."

In the Report for 1865, the Committee stated that "more contributors of papers were required,"—a want, we know, which has frequently been felt, and has not yet disappeared; and that "more papers on palæontology" were desirable. But in this last case, descriptions of fossils are useless without figures, and these are usually too expensive for our publications. What we have at times been able to produce have been partly or wholly due to the liberality of Members.

In one respect it is, perhaps, well that we have not been much engaged in the publication of new species of organic remains, for not only are illustrations expensive, but the claims for priority are often made discordant by want of exact dates on the periodicals containing the descriptions, and our "Proceedings" very rarely bear a date coinciding with the month of their publication.

I. 2 and 3.—*Exhibition and Exchange of Specimens.*

1. The *Exhibition* of rare and interesting specimens of rocks, minerals, and fossils has always been readily effected among us; and has been the source of much pleasure and instruction, whether at Ordinary Meetings or at *Conversazioni*. There is no doubt, however, that these good results could be greatly enlarged by greater earnestness of workers in bringing or sending more and more specimens for exhibition, and if a portion of each meeting-evening, or some extra evenings, were specially devoted to this object.

2. The *Exchange*, however, of specimens has not been carried out satisfactorily, either among Members meeting in Town, or others residing at distances apart. Indeed the later editions of the Rules of the Association omit to mention it as an object in view.

At the meeting of the General Committee on February 8th,

1859, the Exchange Committee brought up a Report submitting a form of Register to be prepared for the record of particulars in reference to Exchanges among the Members.

I do not know if this Register has been preserved, or even if it were ever in use, except that in a Notice-paper, dated September 12th, 1859, the following paragraph occurs:—

“The Rooms [at No. 5, Cavendish Square] will be open for the use of Members on the evening of the *third* Monday of each month, between the hours of seven and nine o'clock, at which period the Register of Members desirous of exchanging specimens will be placed on the table.”

In the First Annual Report, dated January 2, 1860 (“Proceedings,” vol. i., p. 26), it is remarked that: “The Exchange of Specimens proceeds somewhat more slowly [than the formation of the Collection]; but already several boxes have been forwarded to the Association; and, as soon as a few more arrive, the Committee hope to be able to distribute the contents among the corresponding Members.”

In the “Proceedings,” vol. i., pp. 47, 48, printed in 1860, there is a request that “those Members who are desirous of exchanging fossils will inform the Secretary from what strata they can supply specimens, and from what formation they would wish for others in return. The Secretary will then, as soon as possible, endeavour to place the Members desiring to exchange in communication with one another.”

On December 2, 1861, our fellow-member Mr. A. Bott addressed the meeting on this subject, and urged “upon Members who had duplicates to share the advantage of Exchange.”

His remarks were printed (“Proceed.” vol. i., pp. 195, 196) as follows:—

On the Exchange of Fossils among Members. By A. Bott, Esq., A.A.

“Mr. Bott stated, that having found the difficulty of getting Members to exchange specimens, and having received letters from a Country Member complaining of the same, he thought it might not be out of place, at the beginning of the Session, to say a few words on this subject. The Association would remember it was part of their original prospectus, that the object of the Association was, amongst other things, ‘to facilitate the exchange of fossils among the members;’ and again, it was proposed even ‘to form

a Committee to communicate with Members as to the Exchange of Fossils, and the supply of specimens for the Museum ;' so that the Association gave every facility in its power for carrying out this part of its programme.

" He believed that most Members who were collectors were possessed of duplicate specimens of many of these fossils ; and yet, though they had the power, though they had the services of the Association, one of the objects of which is to facilitate the Exchange of Specimens, and though they had the fossils at their command, hardly any of them, in fact, made such exchanges. He believed the only reason was, that different people put such a very different value on the same specimens, each imagining his fossils to be more valuable than those of another person.

" He would urge upon Members not to be too particular as to the money value of the fossils they received in exchange for what they sent, and reminded them, at all events, they could obtain fossils which they did not possess before, which was the great object of exchange. He himself had acted with advantage on the plan of trusting entirely to his correspondent ; having effected a satisfactory exchange of fossils with another Member who, having heard through the Association that he wished to exchange, wrote to ask for some fossils from his (the author's) district, promising to send fossils from his own district in return. This was done, and the result was satisfactory to both parties.

" He would, therefore, urge upon those members who had duplicates to share the advantage of exchange."

An extra meeting was to be held on June 16th, 1862, for the Members to consult and use the Library and Cabinet. The notice-paper of June 2nd stated that, "It has been suggested that the Meeting would be a suitable opportunity for endeavouring to carry out two of the objects contemplated in the original prospectus of the Association, viz., the Exchange of Fossils among the Members, and the Rectification of doubtfully named specimens." Messrs. J. Pickering and G. E. Roberts, two earnest, but now long lost Members and friends, had undertaken to help in these arrangements.

The system of Exchange, however, has not succeeded, owing, probably, to the great amount of administrative trouble involved in it. In the Annual Report for 1865 (published in 1866), page 3, we read :—

"Your Committee have in previous Annual Reports asked for suggestions and recommendations in reference to the Exchange of Specimens. The subject is by no means devoid of difficulty ; but they are anxious, by constantly keeping it before the Association, to arrive at last at some practical solution." We see, therefore, that, though the Laws of 1864 are silent on this point, it is clear that the Committee did not lose sight of this proposed object.

Thus, one of the proposed objects of the Society was originally the Exchange of Specimens between Members, with the intention of both completing private and local collections, and furnishing fresh or different specimens for comparison and instruction. So far this has not been productive of tangible results, chiefly, it seems, because of there being no organization after all whereby the wants of individuals can be expressed. It is very evident that such a system of exchange might be productive of most beneficial results. Students could learn to compare different species and genera, and thus learn more. They might be led to extend their researches into those species or genera of which their localities gave but a few samples. It is impossible to see how far geological knowledge might not be furthered by increasing the number of laborious earnest workers ; and by mutual comparison of their collections these might learn how much more there was to be looked for, and in what direction their research might usefully be directed. For example, a person living in a Chalk district might be conversant with the commoner Chalk fossils ; but, until he had had the means of understanding from others that, besides the few common sorts—to him the only unmistakable relics of old time—there were other forms, of even wider interest, though less readily observed, as for instance as Foraminifera and other delicate and beautiful, though to some eyes obscure, forms of ancient life, he would not be capable of doing all the good he was willing to do by his local work.

Exchange, therefore, might be not merely instructive—in improving and extending the area of personal knowledge—not merely interesting as the means of bringing together fellow-students in the same line of thought, but of the highest advantage in directing the student's energies into wider ranges of thought and of research, of which, but for the specimens he had received in exchange, he would have had but a faint of idea.

Exchange, then, of specimens is but an extension of exchange

of thought, reduced to tangible facts. If, therefore, the concluding pages of the "Proceedings" contained an "exchange column,"—statements of what some wanted and what others had to give, the usefulness of the Society, as a means of extending the general knowledge of the world, would indubitably be increased.

The actual exchange could be carried out at the Meetings by agreement; for the cost of transmission by post or otherwise might be needlessly heavy. If such a system of exchange could be enlarged, it might have the very great benefit of increasing the personal knowledge of the Members, with advantage to all.

There is, I believe, an "Exchange Society" among Microscopists, but their specimens and slides go easily by post, our wares are usually too heavy for that mode of conveyance.

But, after all, there is another aspect to the question. It is unnecessary to exchange after all. Exchange may mean exchange of value in its hardest sense. Yet to one person a common Echinoderm might be (however intrinsically worthless) of real value if he did not happen to possess it. So that for exchange the term *interchange* might be adopted, and even extended into giving.

I. 4 and 5.—The interchange of geological news, and personal communications of interesting facts as to the search for and collecting of specimens, the outcome of Excursions made, and the aim and hope of intentions yet unfulfilled, form subject-matter for conversation and gossip at Evening Meetings, whether ordinary or more generally open to the friends of Members.

CONVERSAZIONI.

1863. It was proposed to hold a *soirée* in March of this year. (Notice-paper of January 5th, 1863.)

1864?

1865. January 5th, a *soirée* was attended by 100 Members and friends ("Proceed." vol. i, p. 415); and another was very successful in this year. (See Annual Report for 1865, p. 3.)

1866. There was to be a *Conversazione* on Nov. 6th.

1867—73?

There were no *soirées* between 1874 and 1877; but at the Annual Meeting in February, 1877, an exhibition of objects of interest was held after the General Meeting; and this kind of *soirée* has been continued since.

These methods of intercommunication aid much in the dissemination of scientific knowledge, unless a stiff formality, a want of earnestness, or the expectation of mere sensational papers interferes.

So also the *printing of papers* necessarily distributes discoveries and useful applications, besides fixing in print, for future reference, good facts and theories in Geology and the Associated Sciences. We have alluded to the "Proceedings" and the "Separate Memoirs," but the "Notice-papers" issued in connection with each *Excursion* are of more value than at first glance they appear to be. Even the earlier Notices (not always relating to excursions) are useful, and often the sole witness of what the Association has done or tried to do ; and those of later date are enriched with good sections and full notes of the Geological Structure of places to be visited. It is very much to be regretted that we have no perfect series of these casual, but noteworthy and useful papers. Contributions of any such to our Library are highly desirable, not only as illustrative of the history of the Association, but as containing information often worth being referred to. It is inconvenient that, in size and shape, these papers have not been uniform ; and it is a pity that they are not always printed on good paper, strong enough to stand the wear and tear of a long excursion.

In a Notice-paper dated September 12th, 1859, two "sets of printed Quarterly Papers" are referred to as having been distributed to the Members. Of these papers, as yet, I have been able to get no clear notion. One short Report* of the intention and rules of the young Society was issued under date of March 8th, 1859, consisting of an "Extract from Original Prospectus," and Rules as to Membership.

I have seen also three other Notice-papers, which may have been "Quarterly Reports," dated respectively May, 1861 ; February, 1862 ; and January 5th, 1863 ; and one without date, but probably printed late in 1867, or early in 1868. As these unpagged, occasional Notice-papers have not commonly been preserved (although I hope there are many more of the series than I have seen), there is added in the APPENDIX a list† of those, published in 1858-70, which have been kept by Mr. J. E. Wakefield, the Rev. T. Wiltshire, Prof. Tennant, Mr. J. Hopkinson, Mr. B. B.

* Lent to me by Mr. Wakefield.

† See Appendix I.

Woodward, and myself, as well as those in the Geological Society's Library. Others,* of later date, have been communicated by Messrs. Lobley and Hopkinson. It is hoped that friends will enable us to complete the set for the Library of the Association. Of those "Annual Reports," also, which were issued separately, there is a great want.

In spite of the earnest and conscientious efforts of the Committee and Officers, the affairs of the Association were not flourishing in 1870. The appended statistical Table shows how few Members were annually elected for 1863 to 1870, inclusive.

THE GEOLOGISTS' ASSOCIATION.

(Founded December 17th, 1858.)

Year.	No. of Members Elected.	No. of Papers Read.	No. of Excursions.	No. of Visits to Museums.
1859	164	10	—	—
1860	31	12	3	1 (Maidstone)
1861	57	28	3	1 (Oxford)
1862	60	14	4	3
1863	16	17	4	7
1864	9	11	5	††
1865	15	12	3	††
1866	11	11	9	††
1867	6	9	3	1 † (Paris Exhibition)
1868	7	8	4	††
1869	10	11	7	1 † (Oxford)
1870	7	12	11	4
1871	59	13	8	12
1872	46	17	10	8
1873	57	11	9	14
1874	49	11	8	7
1875	48	12	7	5
1876	52	14	9	6
1877	49	10	8	11
1878	32	12	5	4
1879	27	10	13	8
1880	49	9	9	8

* A friend tells me in correspondence that a chief object in keeping the occasional notices and other papers of the Association, especially the Notices of Excursions, has been that he might refer to any place that he had visited on such occasions, and thus supply dates for labelling specimens which he had collected; and, in some cases, he finds the date itself to be of use in recovering the right locality for a fossil.

† There may have been visits to the Museums in London during these years, but no notice of their occurrence has been met with.

This interesting Table of the Statistics of the Association has been compiled partly by Mr. J. Logan Lobley, and partly by Mr. B. B. Woodward, with corrections up to the present date. In 1871 we see, there was a sudden rise in the number of elections, fairly kept up afterwards until the last two years (1878-9) of "bad times" and general depression [1880 has been added while *in press*].

The personal exertions of some of the newer Members, who had considerable administrative ability as well as enthusiasm, caused a general stirring at, and indeed before that time in the society; for these, urging the desertion of some narrow and old-fashioned ways, insisted on a greater liberality towards the Members at large and the Country Members in particular. Hence there was ultimately considerable modification of procedure in printing and supplying the "Proceedings" regularly every quarter, free of expense, and in the regular issue of a Circular preceding the Monthly Meeting to all Members, and Notices with information relative to Excursions about to be taken. We must note that these kinds of publications had always been prepared and issued, as far as circumstances and means had allowed under the old system, as indeed the List of Publications* in the Appendix shows clearly, though perhaps not quite completely. But, aiming at extreme economy, the authorities had not attained the good result of satisfying the expectations of subscribing Members in Town and Country. Nor could the existing Committee be persuaded to enter fully on the new method, until, by the introduction of the rule (common elsewhere), that some of the councilmen longest at the board should leave each year, new men were amalgamated into it. Thus, with some alteration of the rules,† and a new policy of boldly applying the funds to the issue of publications and the increase of the Library, new Members being rapidly enrolled, increased receipts were the result. Doubtless the useful Library was an important element of vitality in the society, and the germ, as it were, of renewed life and vigour, especially when (in 1873) some of the funds were liberated for the purchase of books.

There were also endeavours to plan the Excursions more systematically, making them more frequent and regular, and for the most part offering greater attractions than formerly.

* See Appendix I.

† For the new rules about Committee-men retiring in rotation, see Law xv, as published in the "Proceedings," vol. iv, p. 203, January 1875.

About this time there was a reaction against an impolitic paragraph in the Notice-paper of June 14th, 1870, limiting the privilege of joining an Excursion to those who gave notice of their intention of doing so. This parental strictness, interfering with the freewill and convenience of willing Members, not being approved of, led to discussion and alterations in the management.

The occasional printing of Memoirs in full,* and the rare issue of abstracts of Papers and Reports of Excursions, and the somewhat scanty Annual Reports, between 1865 and 1870, supplemented by a failure in getting the Proceedings published regularly in the "Geological Repertory" in 1866†, had been but poor inducements for new Members to join the Association.

The revival of printed "Proceedings" in 1871 coincides with the marked increase in the number of Members (59 being elected in that year, and only seven the year before), and therefore with the improved finance; also with the increased energy among the Officers and Members which brought about a "reform," almost a renewal, of the Association. The new Honorary Secretary and Editor (Mr. Lobley) in 1871 made an Index for the eleven Nos. of the "Proceedings,"‡ vol. i, previously issued for 1859-65, and commenced the second volume with the April number for that year, in the summer of 1871, under the auspices of the new *régime*. And here it will be appropriate to state that among those who took a prominent part in thus restoring the society by improving its *status*, and enlarging and advancing its interests, I have heard the names of Mr. J. L. Lobley|| and Mr. J. Hopkinson specially men-

* See the List of these papers above, at p. 20.

† The "Proceedings" were to have been published in the "Geol. and Nat. Hist. Repertory" once a month, and three numbers issued quarterly; and with additional postage the monthly numbers were to have been had. Only a few abstracts and papers were printed in the "Repertory," and remain imperfect. (See above, page 19.)

‡ See above, page 19, *note*.

|| The high estimation with which Mr. Lobley's services as Secretary were regarded is shown by the subjoined extract from the Annual Report for 1873, "Proceed. Geol. Assoc." vol. iii, p. 348:—"It is with feelings of the sincerest regret that your Committee have to announce the resignation of your Honorary Secretary, J. Logan Lobley, Esq., F.G.S., who, during a period of three years, has devoted himself most indefatigably to the promotion of the best interests of the Association. A review of the progress of the Society under Mr. Lobley's auspices as Secretary sufficiently attests the advantages it has derived from his great energy, his uniform courtesy and kindness, and the zeal and industry he has shown in promoting its success on every occasion. He has, however, generously consented to give us his continued aid and assistance as Editor of the 'Proceedings.'"

tioned. The names of the other energetic reformers are published with the foregoing in the Lists of Officers and Committees of the period.

Reverting from this digression to the "Proceedings" themselves, I have to suggest (1), that the date of publication, as well as the relative date of the contents, should be printed on the covers ; and (2), that a few pages of each number should be used (if practicable) for Notes and Queries, *Desiderata*, Notices of Exchange, and such like *Miscellanea* ; and that this proposal should be taken into consideration, and be a subject for suggestion, by the Members at large.

II. *The Library*.—The Library was begun with the foundation of the Association. (See "Proceedings," vol. i, p. 4.) In a Notice-paper dated June 6, 1862, it is stated that an Extra Meeting was to be held on June 16th, when no paper was to be read, but the Library and the Cabinet of Specimens were to be open for exchange of the books on loan, and for the study of the fossils. Some Members had promised to bring microscopical objects for examination.

From that time onward nothing but quiet congratulation on the possession of a Library, and hopes that it will be well supported and enlarged, occur on this subject in the Reports, which have always to record the willing assistance of successive Honorary Librarians in taking charge of the Books and dispensing them to the Members on the Evenings of Meeting. Pecuniary assistance, however, to the Library has always been limited, and before 1868 (excepting an occasional small grant) was at a minimum. The Catalogue of the Books in our Library was first printed in the Annual Report for 1862 ("Proceedings," vol. i, p. 310) ; and was inserted in the successive Annual Reports until 1876.

In February, 1879, a very careful and well printed Catalogue was published, and a Supplement of *Addenda et Corrigenda* was issued in 1880. This Catalogue had been prepared by our enthusiastic Librarian, Mr. B. B. Woodward ; and from the Preface written by him, but not published, I take the following extract, which expresses what I wish to say on the subject :—

" 'The formation of a Library,' or 'the gathering of sound geological books,' for the purpose of reference and study, was one of the 'objects' for which the Geologists' Association was estab-

lished, and one which was immediately acted on, for at the second Ordinary Meeting (March 8, 1859) this useful undertaking was fairly started, the first Donations being recorded in the Proceedings of the evening.

“ Since that date, with some few exceptions at the beginning, Donations have continued to come in at each Meeting in steady and ever-increasing numbers.

“ Voluntary contributions formed for some time the sole support of the infant Library, until at the Annual Meeting, held January 7, 1861, the Committee were enabled to recommend that the sum of £5 should be expended in the purchase of ‘good geological works.’ The Report being adopted, this recommendation was carried into effect; and a list of the works thus obtained is appended to the Proceedings of that date. Further sums were afterwards, from time to time, invested in like manner, notably in 1862, when the still unrivalled ‘ Monographs of the Palæontographical Society ’ were added to the collection.

“ Yet a third source, whence additions to the Library have been obtained, needs to be mentioned. By instituting a system of exchange of ‘ Proceedings ’ with kindred Societies all over the country, a series of useful and valuable volumes have been gathered together at a small expense to the Association, but to the greatly enhanced worth of the Library, both as a means of reference and of acquainting the Members with the work of the various local Geologists who contribute the results of their investigations to such Societies.

“ Starting with only ten, this practice has gradually spread until, at the present time, there are more than thirty Societies on the list, and fresh applications, some even from Foreign Societies of note, have been received.”

On this topic I have little to add, except that we have now (I am informed by our energetic Honorary Librarian) about 1,300 works in the Library. These books are well appreciated as aids to knowledge in many ways. Our aim should be to accumulate for use as many as possible of these handy depositories of thought and facts. Our funds have not allowed of much liberality as to books. This is a pity! I merely add that our present Bookcase was bought and set up in 1872; and that a larger, or additional, case is very much wanted now.

III. *The Collection of Typical Fossils.*—In the first “Annual Report” (“Proceed.,” vol. i, p. 26), January 2, 1860, the Members were told that—

“The formation of a typical collection of Fossils is in progress. The work proceeds satisfactorily; and the Collection will no doubt shortly become of considerable extent, since many Members have promised to contribute specimens as soon as a proper Cabinet could be obtained, which has now been done.”

By a Notice-paper, or Quarterly (?) Report, of “May, 1861,” the Members learn that—

“The number of typical Fossils already accumulated is far too great for the limited amount of cabinet-room at the disposal of the Association.”

In the “Annual Report of 1862” (February, 1863, “Proceed.,” vol. i, p. 305), a list of the fossils presented during the year is given.

In 1865 (“Annual Report for 1864”) a Sub-committee reported that “the Collection already exceeded the space available for its reception, and recommended the enlargement of cabinet room, and measures for rendering it more available to Members.” It was proposed that an Extra Meeting should be held on the 24th January, 1865, to examine and compare the Fossils of the Cabinet, as well as any specimens which Members might bring or send for exhibition.

In 1866 the Report of 1865 was read, and the Cabinet of *named typical Specimens* is referred to, with its “increased accommodation;” and more specimens are asked for.

In 1867 the Committee stated, in the “Report for 1866,” that they wished to see the Cabinet in a more satisfactory position, (the Association met at King’s College at that time). They remarked that a “fairly typical Collection” would be “perhaps desirable for the Evening Meetings;” but there are some large National Collections available to the Members for the purposes of study; and they intimate, therefore, that the expense and trouble of a Special Museum might be avoided by the Association. They invited, however, suggestions on the subject, especially how to complete a collection useful for the Members; and they think that the Specimens should be more readily got at and *periodically studied*.

Since 1867 (“Report for 1866”) the Collection and its Cabinet

have not been referred to in the "Annual Reports;" * and the Cabinet is not brought forward at the Meetings. Indeed, as we have stated above (p. 14), the formation of a typical Collection was no longer alluded to, even in the Rules printed in 1864.

Doubtless no species of mineral or of fossil can be properly determined without the comparison of typical specimens. We must go either far or near for these. There are, however, both private and national Collections open to students and workers. The new arrangements and well-considered accommodation for students at the new National Natural-History Museum, "British Museum, S.W.," at South Kensington (though awkwardly distant) will be greatly conducive to useful study and good results. Whether the limited typical collection ("fossils" only seem to have been always entertained by the Committees), so long thought of and so frequently alluded to, would now be of real value to the Members on Meeting-nights and at other occasions, and not too expensive in its preparation and preservation, they can best decide, if the subject has to be definitely determined. Probably an economic exchange of the fossils † for *books* would be productive of more good than the Collection can at present afford.

IV. *Excursions or Field-Lectures.*—I have already alluded, at p. 11, to the establishment of a system of Field-Lectures. In the "Geologist," vol. ii, p. 329, August, 1859, there were suggestions for the Association to have Excursions, with a reminder that early Members had desired there should be field-meetings, as being of as much use (especially to Country Members) as indoor readings and discussions. It was also suggested that an annual field-meeting should be held, with readings, as with the British Association, or "something of this kind," by aid of the Excursion-trains; and thus Country Members and their city brethren could more easily meet and interchange thoughts and courtesies. The letter was signed "PROVINCIAL GEOLOGIST."

At page 368 of the same volume of the "Geologist" it appears that the Rev. T. Wiltshire, then President of the Association, was deputed to state that during next year [1860] the Com-

* In a Notice-paper of 1871, copied from one of 1867, the "Typical Collection" is still referred to as one of the original objects of the Association.

† The Collection is at present in the Library of the University College, where the Association has the privilege of holding its Meetings; and it is stored away in a part of the old book-case of the Association.

mittee of the Association would "invite the Members to a geological ramble, and to spend a summer's day both pleasantly and profitably;" and he said truly that "a lecture given at a natural section, and on the fossils *in situ*, is far more valuable and instructive than one illustrated by the most expensive diagrams."

The first notice of an Excursion of Members we meet with is of that to Folkestone, April 9, 1860. Maidstone, also, and Charlton are mentioned in the Report of January 7, 1861, as having been visited in 1860. Redhill and Reigate, in April, Oxford, in May, and the Isle of Sheppey in August, 1860, were next visited.

The Annual Report for 1861, given in January, 1862 ("Proceed.," vol. i, p. 200), states that "The plan of conducting occasional Excursions to places of geological interest, which was organised in 1860, has proved a complete success."

Hastings (50 members), Cambridge, and Lewes were soon afterwards visited; and the Brighton Museum, the Main-Drainage Works, and the International Exhibition, drew attention in 1862.

In 1863 the Committee seem to have had good reason to report that "the Excursions to places of geological interest have proved as successful as in former years. On all these occasions the local geologists, and others feeling an interest in Geology, have stepped forward to assist; and on more than one occasion have hospitably entertained the Members of the Association who were present."

In the Report for 1864 Country Members were asked to aid with their local knowledge in the arrangement of Excursions. In the Report for 1865 the Committee state that they feel it to be their duty "to point out the wide field open to the exercise of your Members' energies, and the particular direction which might with most advantage be given to them." With this view, they "propose to give them [the Excursions] a somewhat more formal organization," so that absent Members "may profit by the results of their more fortunate colleagues."

In the Annual Report for 1866 it was intimated that Excursions are necessary for practical and good knowledge, besides the cabinet and lecture-room, and that good Excursions require—1. Good planning; 2. Good leaders; 3. Good reporting; also that it is a pity to lose the results of Excursions for want of the last.

In a Notice-paper of July 11th, 1866, it was advertised that, should twelve names be received before August 1st, a two-days

Excursion would be made to Matlock. This seems to be the first indication of the *Long Excursions*.

In 1867 M. de Verneuil, President of the Geological Society of France, invited the Members of the Geological Association to take part in the Meeting of the Geologists at Paris; also in the Excursions and the visit to the International Exhibition that they then organized for themselves and friends.

Some Members having visited the Paris Exhibition (International) in 1867 (by invitation), and having been impressed with the desirability of advancing Technical Education, and feeling assured that the practical learning of Geology in the field is of this kind, the Committee urge upon the Members the importance of assisting at the Field-Lectures (some of which had of late been poorly attended), both by more constant attendance and by suggestions as to fixing upon the best places, the best plans, and the best times for their Excursions; also for their more active co-operation in securing full Reports of these Excursions, and in securing an unbroken supply of useful Papers for reading at the Ordinary Meetings.

The next Annual Report speaks of the satisfactory increase and development of Excursions, and of the good number and quality of the Papers printed and circulated among the Members.

In the "Annual Report for 1869" (published in 1870), the Committee urge "the importance to geological students of verifying in the field the statements and inferences they find in books." The many printed Reports of the Excursions demonstrate, they say, "the truth and value of their former appeals."

We append * a List of Excursions made by the Association, and need not follow further the history of the Excursions, which are so well appreciated and sometimes so well attended by the Members. Without this kind of work many of us would know geology merely as readers; and out-door work greatly enlarges our mental grasp.

The geological formations inspected or examined at the Excursions have been for several years tabulated in the Annual Reports, with the lists of the Excursions, Directors, and local entertainers.

Excursions.—It may be objected by some that our Excursions lead us too often to the same spot. It cannot be too definitely

* See Appendix II.

pointed out that the true study of Science does not consist in the pursuit of mere novelties. Many of those whose names are broadest writ on the scroll containing the names of the great seekers after Truth are the men who have given their lives to the study of one branch of knowledge. They have been specialists, and have spent a life-time in studying one set of things ; with the feeling, too, at the end, that after all they have but been gathering shells and pebbles by the side of the great ocean of "What there is to know." If these great pioneers of knowledge have thought it wise and good and useful to spend their lives in the steadfast examination of one group of facts, one class of events, one set of phenomena, surely we, who, compared with them, have but dilet-tanti aims, can at least find useful work in the occasional repetition of one line of thought, whether studying rocks in the field, or writing papers at home.

It is but a weak saying:—"Change is necessary for work." What if we do visit, not twice or thrice, but twenty or thirty times, the same set of strata, the same geological formation? Do we not, each time we visit a quarry, learn that we never see the same thing, never exactly the same set of rocks and minerals, never the same kind of fossils even, that is, under the same condition of deposition or of preservation? No earnest geologist sees in a re-visited section of strata, even in a limited area, the same set of facts exactly: there is new evidence of a change of current here, a change of conditions there, an alteration in the local form of life elsewhere. All the same as before to the careless eye—but how great, and wonderful sometimes, a variation to the mind of the thoughtful man! Take a common gravel-pit for instance. Here the "pan" is thicker and stronger; there the gravel is more sub-angular or coarser—here there is a pocket of quartz grains—there some loam and finer sand. Much is to be learnt, we know, from these minor changes in a hundred yards of section. And if this be true of one poor gravel-bank of an ancient sea-creek or shoaling beach, how much more so for other portions of the *same Geological Formation* seen at places many miles apart!

Chalk at Guildford and chalk in the Isle of Wight are both chalk and nothing but chalk—blank, white, and meaningless—to a mere "Tourist;" but it is not quite the same, however nearly the external appearances may approach each other. Different depths of the sea in which it was formed, varying tides and

winds, different families of organic beings, different conditions of these same families even, obtained at every different place.

The Anglo-Saxon in America is not quite the Anglo-Saxon of Great Britain; the Englishman of the West of England is not the same as the Kentish man, and yet they belong to the same race. It were as wise to say that, because we have seen the scenery of the English Lakes, it would be waste of time to see the Scotch Lakes, both being *Lake Countries*, as to say, because the Geologists' Association have seen the London-clay at Sheppey, it is unnecessary for them to see the London-clay at Reading, or to see it again and again at one or both places. Above all things it is requisite that we should avoid assuming that, having seen the fringe of Scientific Things, we should dismiss any one thing as known.

All this applies equally well to good papers which at our Meetings we may hear read on similar matters, and bearing the same titles. Even if about the same set of things, the thoughts and conclusions have filtered through other minds, and may be presented to us in a different aspect, and in a more useful form. A story may be well told by one observer, and better by another. In the well-known "Evenings at Home" two observers see the same lanes and heath-land and surrounding nature. The one has learnt nothing, yet tells his story; the other returns with new ideas, new thoughts, and new observations. As this story is differently told by the two boys, so may it be said of all research; and thus we get the lesson—that no two pairs of eyes have quite the same way of looking at things, nor two observers quite the same way of telling them.

The methodical observer, however, seeing with enlightened eye the works of the Creator, and favoured with the intellectual power of interpreting their meaning, thereby gains for himself knowledge useful for mankind. He is blest in receiving and giving this knowledge: at the very least, he sees more and enjoys more than the uneducated man—for

"To the cultur'd eye of Taste
No Rock is barren, and no Wild is waste."

Local Museums and Local Finds.—It has been suggested to me by a friend that the opportunities for examining local collections during our Excursions might lead to the following line of thought.

The formation of either a General Museum, or a series of local Museums, is, perhaps, impracticable, and is frequently unnecessary. Primarily, they would rarely be complete; next, in most instances, better collections can be studied elsewhere. But it would always be unwise to check the collection and preservation of really valuable specimens. But what are valuable specimens? What is really worth keeping, on broad national, if not on private grounds? This may be answered by creating the means of authoritatively deciding what is new, rare, or abnormal. Thus if such personal collections could be inspected by Scientists, who could advise the collector as to the relative or the intrinsic worth of what he had gathered together, a great step in advance would sometimes be made. Valuable fossils would no longer be consigned to the dust-heap, nor would common or indifferent specimens find their place in, and encumber the cabinets of the curious.

If, therefore, those members who have been so fortunate as to accumulate a series of local fossils, minerals, or lithological specimens, could have the means of asking for the assistance of the more experienced fellow members, good would be done to Science, and additional interest imparted to local finds.

V. *Lectures*.—Courses of instructive Lectures were to form one of the chief features of the newly instituted Society.

Mr. S. J. Mackie's "Lectures on Palæontology" were announced to commence on October 10th, 1859. In the first Annual Report, dated January 2nd, 1860 ("Proceedings," vol. i., p. 26), we find that the design of giving class-lectures had been carried out under the superintendence of Mr. Mackie, in two separate courses, of six lectures each. This part of the Association's programme does not appear to have been carried further, however useful it might be made, among some, at least, of the Members, who might wish for a systematic and continued treatment of some branches of their favourite subject under circumstances which would admit of the colloquial method specially adapted for Mutual Instruction.

VI. *Local Secretaries and Committees*.—*Honorary Local Secretaries* were appointed in the early days of the Association, after the system of the Palæontographical Society, to advance the interest of the Association in the Counties.

In the Notice-paper of March 8th, 1859, the Officers of the Association are the Rev. T. Wiltshire, President; Messrs. J. E. Wakefield and W. H. T. Allen, Hon. Secretaries; Messrs. John

Brown,* of Stanway, Essex; George Grant Francis, of Swansea, Glamorganshire; and Edward Wood, of Richmond, Yorkshire, were the Honorary Local Secretaries. Mr. Pulozki was the Honorary Foreign Secretary; and Mr. Hislop was Treasurer.

In 1862 the Rev. L. H. Mordacque, Parsonage, Haslingden, near Manchester; Dr. E. P. Wilkins, F.G.S., Newport, Isle of Wight; and Mr. E. Wood, F.G.S., Richmond, Yorkshire, were the Hon. Local Secretaries.

Mr. Hyde Clarke (see page 17) and others, had in view at this time (1859) "The cultivation of beneficial relations with the Country Field-clubs and Societies." This was again urged in the "Annual Report for 1869"; and has been carried out to some extent.† Possibly, however, following the example of the "Mineralogical Society of Great Britain and Ireland," subsidiary colonies of associated Geologists might flourish usefully under Local Secretaries, in communication with the mother Society.

VII. *Special Objects and Desiderata*.—It was suggested in 1870, in the "Annual Report for 1869," wherein the Committee had the pleasure of congratulating the Association on the improvement in the number and quality of both the Excursions and communicated Papers of 1869, that the Association should take into consideration the possibility of conjoint action in the preparation of a Hand-book of Metropolitan Geology, since the form in which the invaluable results of the labours of the National Geological Survey "is not generally available for the purposes of the student, while the scale and range of a National Survey necessarily prohibits the inclusion of many points of detail which are highly interesting to local observers." Nor, may we add, does the Geological Society admit of *general* description and *repetition* of

* Our old friend, Mr. John Brown, F.G.S., of Stanway, died in the course of this year (1859). He had studied Geology, and learnt its value, in his practical business with building and paving stones; and he never lost an opportunity of gathering information, or of imparting it to others, especially in his own neighbourhood about Copford, Essex. Here, at Cromer, on the Coast, and elsewhere, the Post-tertiary deposits received his special attention, as his collections, now chiefly in the British Museum, bear witness. At the last his love of the Science, and his consideration for Geologists were shewn by Bequests of Money to the Geological Society of London and the Geologists' Association. His Legacy of £100 is referred to in the "Proceedings," 1859, vol. i., p. 27; and at p. 200 (1861) it was intimated that the Library would shortly be benefited by the expenditure of £5, which the Committee were thus enabled to afford out of the funds, beyond the £8 spent on Books in 1860.

† Members of local Societies have often joined the Geol. Assoc. in Excursions.

detail. As this work has not yet been taken in hand in the method proposed, the subject is still open for consideration.

With respect to more detailed work in the London district, the Association is more to be praised than blamed. It has not allowed much to pass unobserved in the artificial openings and sections in and near London. Thanks to the energy of many of our Members, seconded by the considerate courtesy of the members of the Metropolitan Board of Works, who have always been among our friends and supporters, all the great excavations in the Metropolis have been noted. The neighbouring railway sections also have been carefully watched.

In the "Proceedings," vol. i., p. 351, in a paper read Nov. 3rd. 1863, Mr. Caleb Evans recommends the "examination of Geological details of the various undertakings" carried on "in the neighbourhood of London, as a work for which the Geologists' Association is well fitted." And certainly he himself and some others have done it well.

In the Report for 1865, the Committee, finding that the Country Members do not supply many papers and observations, propose to draw up a list of *Desiderata* for circulation, "pointing out special topics to which their attention might with benefit be directed."

This was praiseworthy, but probably not of much use. The late J. W. Salter, in the "Geologist," vol. i., pp. 301-3, and Hyde Clarke in the "Geologist," vol. ii., p. 169 (see also above p. 10), mentioned many geological things of interest for examination; and the late Mr. G. E. Roberts supplied the Association with a few pages of "Notes and Queries" in 1864, which were printed and distributed. It was proposed to continue them periodically.

In the 1865 Report, however, the Committee "regret that the circulation of Mr. Roberts' suggestions for registering observations and experiments have not borne more abundant fruits. They believe that the resources of the Members of the Association are amply sufficient to maintain a journal of this kind, and they appeal, therefore, for their aid in developing so good an idea."

The idea still waits to germinate and fructify.

The production of accurate photographic representations of sections and organic bodies has at times been an object of interest to the Members of the Association. (See "Proceed.," vol. i., p. 64, &c.) If the same desire exists of using the art geologically, and of mutually combining to get good and useful results, some

Members interested in the matter might join in doing their best to carry out the project.

VIII. *Lady Members of the Association.*—Rule III. “Ladies shall be eligible for election as Members of the Association.” Not without reason was this Law regarded as a very important element in the constitution of the new Society in 1853. Women, as well as men, can be Geologists, as far as their strength for travel, and opportunities among domestic affairs, will allow.

In one aspect particularly it is well that women should know Geology, for thereby they are enabled to sympathise with, and to understand man’s work in this interesting and not always easy line of Scientific work and thought. One link the stronger between educated man and woman!

Doubtless for many ladies it is hard to tramp about on Geological Excursions over rough roads, hillsides, hedges, ditches, and sea-side rocks and shingle. Let special Excursion-lines be planned, so that we may have the pleasure and advantage of female society. The first notice of the presence of ladies at Excursions was in 1861. Few appear to have attended the field-lectures at any time, until June 23rd, 1870. Since then they have often graced the outings with their presence.

In the Meetings of the Association the female element is an adornment, and a social pleasure. As in Universities (now-a-days) and Colleges, as in the British Association, and Archæological and Social-Science Congresses, so in our Association, how greatly would the scientific meetings and outings lose if the ladies were absent! Some, perhaps, might dare to think that the Universities and Scientific Societies are natural masculinities, and require no feminines, except in the dead and foreign languages, and with some naturally monœcious things! Short-sighted persons! All nature shows that the womanly type (of various degrees) is necessary for both individuals and societies. The type with which we are favoured is a high type, and we respectfully make much of it. Ladies can not only equal Wranglers, as the mathematical lady-graduate of Girton College has recently shown, but ladies can excellently well help geologists, and be geologists themselves. Who requires to be reminded of the intellectual powers and persistent energy of the well-educated woman? We can readily speak of the Lady Members of the Association as types of good thinking women, able and willing to know about the Earth *as the Earth*, and to learn from other persons, as well as from books,

what has been gathered of such knowledge, and what is being thought of old and new notions thereon. The pleasant influence of ladies at the Meetings is universally felt. Women can attend Geological Meetings without hurt to their sensitiveness. Geology, though one of the most comprehensive, is one of the most plain of Sciences.

IX. *Conclusion.*—It seems worth while to look up the details of the history of this Association for several reasons ; but whatever they may be, it is at present sufficient to say that, having been praised by a competent Geologist before a large assembly of Foreign Geologists, we must take it for granted that our rise and progress have been reasonable and successful, and therefore worth noting. Mr. T. Davidson, lately our esteemed Delegate to the Geological Society of France,* to convey congratulations on their Fiftieth year of Existence, found it in his heart to say—"The Geologists' Association of London has also rendered very great service to the science. Founded twenty-one years ago by a number of young men desirous of learning Geology economically by mutual help, and by discussion among themselves of geological questions at the very places where sections and exposures are seen, this Society consists of excellent geologists ; and many of their works would be of credit to geologists of greater pretensions."†

We fully appreciate this praise ; and we know that those who have been here before us have worked hard and willingly that the Association should deserve it.

Lastly, let me say that now-a-days the value of Science is recognised by Society at large, both in some form or other in most systems of Education, and more largely and practically in the pursuits and business of active life. To follow out researches in Natural Science is a wholesome exercise for mind and body ; and the results, though not always immediately effective of good in inventions and applications, are invaluable links in the great chain of known facts, uniting the intelligences of past ages with the present, and the mind-work of many widely-separated peoples. Ultimately these results are welcomed as bringing new advantages, new riches, new enlightenments, and new comforts as additions to the public good.

Geological study fulfils both of these expectations. It benefits

* See the Appendix, III.

† "Quart. Journ. Geol. Soc.," No. 143, p. 97.

the individual, while working in the open air, with fresh scenery and healthful exercise; and, while working at home, with good and useful thoughts, and with the pleasures of discovery. It benefits Society by teaching the avoidance of error in working on and in the earth, by directing and facilitating such work, and by cultivating a good, free, discriminating, and conscientious turn of mind. It helps and improves especially the Architect, Engineer, Miner, Traveller, and Officers of the Army and Navy.

The Geological Society, established long ago, in the interest of our science, was fitted for advanced students; and, high in its monetary requirements, as in its scientific treatment of Geology, was not found available in 1858 for the very many would-be students of our fascinating and useful branch of knowledge. For they wished to enter on the study by personal intercourse with others, mutually interested in the science, rather than by the dry road of books alone.

This much-felt want of some common means of intercommunication among willing learners, who shrank from ranking themselves among the illustrious masters of the Science, induced some 120 of the early Members of our Association to modestly seek *mutual* help as students; and they organised themselves into this healthy and useful body of geologists, so many of whom I have the honour of addressing on this occasion. They proposed, as we have mentioned above:—1, to hold regular meetings for reading and discussing Papers; 2, to form a Museum of typical specimens; 3, to afford facilities for collecting and exchanging specimens; 4, to afford facilities for exhibiting, comparing, and naming specimens; 5, to communicate information as to the best places and methods of search, and to visit geological localities; 6, to establish a Library of reference; and 7, to have short courses of Lectures on appropriate subjects.

The first General Meeting was held on December 17th, 1858, to organise this new Society for the promotion of the study of Geology and its allied Sciences.

The first Ordinary Meeting of the Association was held on January 11th, 1859. Nearly 200 persons were present; and the late Mr. Toulmin Smith, in his Address, urged the necessity for union and mutual help in collecting "True Facts," getting rid of false notions, and promulgating real Geological knowledge.

How far the hopes of youth and the aspirations of adolescence had been verified within our twenty-one years of existence last

spring, you can very well judge for yourselves. You have had full Meetings in town, and pleasant Excursions in the country. You have had the experience of energetic Collectors—the ripe knowledge of learned Philosophers—the bold theories of enthusiastic Thinkers placed freely at your disposal, often with the agreeable accompaniments of the courtesy and hospitality of friends and well-wishers.

In these gatherings, whether between walls or on hill-tops, you have mutually given and partaken of geological knowledge, as the founders hoped. In your Library you have what they only wished to have; and, though you have no great expensive Museum, all museums are open to you.

Your published Proceedings are worthy monuments of patient investigation, mutual improvement, and disseminated knowledge. The sources of such Papers as they contain, and the skill and care that put the Proceedings into shape, speak well of the constitution and practice of this Association.

With such aids to knowledge, and with such means for obtaining its good results, as you have made for yourselves or gathered around you, you have much to be pleased with—to be glad of—to be proud of—and, therefore, to be thankful for. But let us remember that, as a society of amateurs and students, we must follow the lines and precepts of our founders; and, while congratulating ourselves on good results, and giving expression to our ardent desire for the continued well-being and usefulness of the GEOLOGISTS' ASSOCIATION, we must not forget the founders and supporters of the Society, but be warmly grateful to those who have gone as well as to those who are still with us.

APPENDIX I.

A CATALOGUE OF REPORTS, NOTICE-PAPERS, &c., ISSUED BY, OR RELATING TO, THE GEOLOGISTS' ASSOCIATION, FROM 1858 TO 1871. (PROBABLY INCOMPLETE.)

<i>Date.</i>	<i>Description.</i>
1858. December 6	... Prospectus.
1859. January ...	... "Geologist," No. 13, including the Prospectus.
— February.	... "Geologist," No. 14.
— March 8 ...	... Report. (First Report.)
— ? ...	... List of Members.

<i>Date.</i>		<i>Description.</i>	
1859.	September 12	...	Notice paper of coming Meetings, &c.
1860.	August 2...	...	„ Excursion to Charlton.
—	October 15	...	Notice paper : Meetings.
1861.	March 28	...	„ Excursion to Reigate.
—	May 9	...	„ Excursion to Oxford.
—	May	...	Report. (? Quarterly Report.)
1862.	February...	...	Report. (? Quarterly Report.)
—	February...	...	List of Members.
—	April 11	...	Notice paper : Excursion to Hastings.
—	June 6	...	„ „ Cambridge.
—	September 19	...	„ Visits to Museums, &c.
1863.	January 5	..	Report. (? Quarterly Report.)
—	June 18	...	Notice paper: Excursions to Kew, Herne Bay, &c.
—	July 16	...	Notice paper : Excursion to Dover, &c.
—	August 15	...	Report of Visit to Dover. (From a News-paper.)
1864.	...	...	Annual Report for 1863, with Laws, List of Members, &c.
—	March 18...	...	Notice paper: Excursion to Sevenoaks.
—	June 12	...	„ „ „ Bromley.
—	...	...	G. E. Roberts' "Notes and Queries." No. 1. Read June 4, 1864.
1865.	...	...	Annual Report for 1864, and Catalogue of Books.
1866.	...	...	Annual Report for 1865.
—	February...	...	Notice paper of Meetings (at King's College), and Excursions to Rochester, &c.
—	March 24...	...	Notice paper : Excursions to Charlton and Grays.
—	May 16	...	Notice paper : Excursions to Cambridge and Holloway Railway-cuttings.
—	June 7	...	Notice paper : Excursions to Brighton, Highgate, and Sevenoaks.
—	July 11	...	Notice paper : Excursions to Finchley Road, Folkestone, &c.
—	July 28	...	Notice paper : Excursion to the Isle of Thanet.
—	Autumn	...	„ Meetings, &c.
—	November	...	„ Conversazione at King's College on Nov. 6.
1867.	...	...	Annual Report for 1866, with List of Books, &c.
—	...	...	Report (Notice paper).
—	April 13	...	Notice paper: Meetings, and Excursions to Lewes, Hunstanton, and Sheppey.
—	December 4	...	Notice paper : Meetings.
—?	{ Winter of 1867, or Spring of 1868 }	...	„ General (J. Cumming, Hon. Sec.).
1868.	...	...	Annual Report for 1867.

	<i>Date.</i>	<i>Description.</i>
1868.	...	... List of Members.
—	April 17 ...	... Notice paper: Excursions to Lewisham (with sections), Sheppey, Grays, and Reigate.
—	June or July ...	... Notice of Meeting of July 3; and Abstract of Mr. Crombie's paper on the geological distribution of British flowering plants.
—	December 24 ...	... Notice of Meeting of January 1, 1869.
1869.	...	... Annual Report for 1868, List of Books, &c.
—	May 4 ...	... Notice paper: Excursions to Oxford, Charlton, &c.
—	May 29 ...	... Notice paper: Excursions to Guildford and Godalming; and Meeting of June 4.
—	June 15 ...	... Notice paper: Excursion to Caterham.
—	July 29 ...	... Notice paper: Excursions to Hunstanton, Tottenham, and Isle of Wight.
—	...	... Reports of Excursions to Oxford, Guildford, Caterham Junction and Croydon, Hunstanton, Tottenham, and Crayford. In one pamphlet.
1870.	...	... Annual Report for 1869, and List of Books.
—	March 15 ...	... Notice paper: Visits to Museums.
—	March 28 ...	... " " "
—	April 12 ...	... Notice paper: Excursions to Caterham, Grays, Lewisham, Swindon, and Erith.
—	May 24 ...	... Notice paper: Excursions to Nutfield, Aylesbury, Herne Bay, and Hampstead.
—	June 14 ...	... Notice paper: Excursions to Maidstone, Folkestone, and Watford.
—	June 29 ...	... Notice paper: Meeting of July 1. (J. Cumming, Hon. Sec.)
1871? (without date)	...	... Notice paper: General. (J. L. Lobley, Hon. Sec.)

APPENDIX II.

LIST OF EXCURSIONS AND VISITS TO MUSEUMS.

EXCURSIONS.—1860.

<i>Places.</i>	<i>Dates.</i>	<i>Authorities.</i>
Folkestone ...	... April 9 ...	Proc. i., p. 47, 89.
Maidstone and Museum ...	... June 19 ...	„ p. 63, 89.
Charlton ...	... Aug, 13 ...	„ p. 64, 89.

1861.

Redhill and Reigate ...	... April 9 ...	Proc. i., p. 149, 200.
Oxford and Museum ...	... May 20 ...	„ p. 156, 200.
Isle of Sheppey ...	... Aug. 1 ...	„ p. 166, 200.

1862.			
<i>Places.</i>		<i>Dates.</i>	<i>Authorities.</i>
Hastings	...	April 22	Proc. i., p. 248. 50 Members.
Cambridge and Museum	...	June 13	" p. 271.
Lewes	...	Aug. 6	" p. 274.
Old Ford (Drainage Works)		Oct. 18	" p. 277.
1863.			
Dudley...	...	May 27 & 28	Proc. i., p. 334, 358.
Herne Bay and Reculver	...	June 26	" p. 339, 358. 30 Members.
Ipswich and Museum	...	July 20?	" p. 358.
Dover	...	Aug. 20	" p. 358. In newspaper.
1864.			
Sevenoaks	...	March 29...	Proc. i., p. 390.
Bromley...	...	June 18	" p. 404.
Oxford	...	?	} Annual Report for 1864.
Folkestone	...	?	
Isle of Wight	...	?	
(" Geol. Repertory," p. 28?) }			
1865.			
Faringdon	...	?	} Annual Report for 1865.
Swindon	...	?	
Hythe	...	?	
1866.			
Rochester	...	?	Notice-paper, Feb.? 1866.
Charlton	...	April 7	} Annual Report for 1866; and Notice-papers in 1866.
Grays	...	April 21	
Cambridge	...	?	
Brighton	...	June 11	
Holloway and Highgate }		June 16	
Railway Cuttings }			
Sevenoaks	...	June 20	
Midland Railway Tunnel }		June 11	
Works, Finchley Road }			
Folkestone	...	Aug. 2	
Isle of Thanet	...	Aug. 4	
1867.			
Lewes	...	April 22	} Annual Report for 1867.
Thames Embankment Works		April 27	
Hunstanton	...	May 31	
1868.			
Lewisham	...	April 25?...	} Notice-paper, April 17, 1868.
Isle of Sheppey	...	May 4? ...	
Grays, Essex	...	May 23? ...	
Reigate	...	June 20? ...	

1869.			
<i>Places.</i>	<i>Dates.</i>	<i>Authorities.</i>	
Oxford and Museum* ...	May 17 ...	} Annual Report for 1869.	
Charlton ...	May 22? ...		
Guildford* ...	June 2 ...	Geol. Mag. vi, p. 331.	
Caterham and Croydon* ...	June 19 ...	Annual Report for 1869.	
Hunstanton* ...	Aug. 2 ...	Geol. Mag. vi., p. 427; and Annual Report for 1879.	
Tottenham* ...	Aug. 7 ...	} Annual Report for 1869.	
Crayford ...	? ...		

1870.			
Caterham and Oxtead ...	April 19 ...	Proc. ii., p. 28.	
Grays ...	April 23 ...	" p. 29.	
Lewisham ...	May 7 ...	" p. 33.	
Swindon, Stroud and Mayhill	May 9-11...	" p. 33.	
Crayford and Erith ...	May 21 ...	" p. 34.	
Tilburstow Hill and Nutfield	May 28 ...	" p. 35.	
Aylesbury ...	June 1 ...	" p. 36.	
Herne Bay ...	June 6 ...	" p. 38.	
Hampstead and Mr. Caleb Evans' Collection }	June 11 ...	" p. 40; Annual Report for 1870.	
Folkestone ...	June 18 ...	" p. 41.	
Watford... ...	June 23 ...	" p. 43.	

1871.			
Cambridge, and Museum ...	Apr. 10 & 11	Proc. ii., p. 219.	
Belvidere, and Mr Spurrel's) Museum ... }	April 29 ...	" p. 229.	
Oxford, and Museums ...	May 12 & 13	" p. 243.	
Grays, Essex ...	May 20 ...	" p. 245.	
Yeovil, and Collections ...	{ May 29— June 1 }	" p. 274.	
Ilford and the Brady Museum	June 17 ...	" p. 273.	
Caterham and Riddlesdown	July 1 ...	" p. 274.	
Warwickshire, the Warw.) N. H. Soc. Museum, and Rev. P. B. Brodie's) Museum }	July 10 & 11	" p. 284.	

In a Notice-paper of 1871, copied from one of 1867 or '68, both Tunbridge and Harwich are mentioned as having been visited by the Members. At p. 200, vol. i. of the "Proceedings," it was proposed to visit these places, but they do not appear in the foregoing list

1872.			
Maidstone, and Museum ...	April 2 ...	Proc. iii., p. 38.	

* Reports of these Excursions were printed in one 8vo. pamphlet, dated 1869.

1872.

<i>Places.</i>	<i>Dates.</i>	<i>Authorities.</i>
Watford and Bushey ...	April 13. ...	Proc. iii., p. 65.
Hampstead, and Mr. C. } Evans' Collection	April 27 ...	" p. 67.
Erith and Crayford ...	May 4 ...	" p. 83.
Bath, and Museums ...	May, 20 & 21,	p. 89.
Guildford and Chilworth, } and Mr. Godwin Aus- ten's Collection	June 1 ...	" p. 93.
Bromley and Chiselhurst ...	June 15 ...	" p. 114.
Hendon and Finchley; and } Dr. Hicks' Collection	June 22 ...	" p. 115.
Walton-on-the-Naze ...	July 8 ...	" p. 122.
Ludlow and Museum, and } the Longmynd ...	July 22-27...	" p. 124 ; Ann. Report for 1872, p. 5.

1873.

Banbury, and Mr Beesley's } Museum ...	April 14 & 15	Proc. iii., p. 197.
Charlton ...	April 26 ...	" p. 205.
Aylesbury ...	May 5 ...	" p. 210.
Eastbourne (Collections), } and St Leonards	May 23 & 24	" p. 211.
Finchley ...	May 31 ...	" p. 214.
Brighton, and Museum } and private Collections	June 11 ...	" p. 239.
Hatfield ...	June 23 ...	" p. 240.
Plumstead and Crossness ...	July 5 ...	" p. 265.
Malvern (Dr. Grindrod's } Museum), Ledbury, Eastnor, Pendock, Tewkesbury, Wool- hope. ...	July 21-26 ...	" p. 269.

1874.

Oxford, and Museum ...	April 6 & 7	Proc. iv., p. 91.
Lewisham ...	April 24 ...	" p. 114.
Grays, Essex ...	May 16 ...	" p. 123.
Northamptonshire, and } Mr. S. Sharp's Museum	May 25 & 26	" p. 123.
Tilburstow and Nutfield ...	June 13 ...	" p. 153.
Hampstead, and Mr. C. } Evans' Collection	June 22 ...	" p. 155.
St. Mary's Cray, Wellhill, } and Shoreham, Kent	June 26 ...	" p. 167.

1874.

<i>Places.</i>	<i>Dates.</i>	<i>Authorities.</i>
Cheltenham, Cotteswold, Mayhill, Garden Cliff, Tewkesbury, Apperley, Wainlode Cliff, and Miss Strickland's and the Rev. F. Smithe's Collections ...	July 20-26 ...	Proc. iv., p. 167.

1875.

Riddlesdown and Croydon...	April 17 ...	Proc. iv., p. 283.
Watford ...	May 1 ...	„ p. 284.
Charnwood Forest and Leicestershire; and the Leicester Museum	May 17-19 ...	„ p. 307.
Watford ...	May 29 ...	Mr. Hopkinson in letter.
Isle of Sheppey ...	June 7 ...	Proc. iv., p. 320.
Erith and Crayford ...	June 26 ...	„ p. 323.
South Kensington (exca- vations for the new Museum) ...	July 10 ...	„ p. 325.
East Yorkshire; and the York, Whitby, and Scarborough Museums	July 19-24 ...	„ p. 326.

1876.

Grantham and Notting- ham, and Museum	April 17 & 18	Proc. iv., p. 491.
Bromley, Sundridge, and Chiselhurst ...	April 22 ...	„ p. 498.
Gorge of the Medway and Kit-coty-house	May 1 ...	„ p. 503.
Hatfield ...	May 13 ...	„ p. 518.
Reading, and Mr. Palmer's Collection ...	June 3 ...	„ p. 519.
Swindon (Mr. C. Moore's Collection) ...	June 5, 6 ...	„ p. 543.
and Faringdon		
Sandgate and Folkestone...	June 19 ...	„ p. 554.

1876.

Blackheath and Charlton...	July 1 ...	Proc. iv., p. 557.
North Wales Border, and Mr. Ruddy's Wenlock Collection ...	July 17-22 ...	„ p. 559.

1877.		
<i>Places.</i>	<i>Dates.</i>	<i>Authorities.</i>
Harwich, Felixstowe, } Chillesford, and Ipswich, } and Museum ...	April 2, 3 ...	Proc. v., p. 108.
Grays, Essex ...	April 21 ...	" p. 125.
Wantage, and Mr. Davey's } Collections ...	May 7 ...	" p. 137.
Leicestershire, and the } Leicester Museum	May 21, 22 ...	" p. 142.
Caterham, Godstone, Til- } burstow, and Nutfield; } and Mr. Cluse's Collection	June 4 ...	" p. 155.
Hampstead, and Mr. C. } Evans' Collection	June 16 ...	" p. 160.
Guildford and Seale, and } the Rev. T. T. Griffith's } Collection ...	June 25 ...	" p. 161.
Derbyshire, and Castleton } Museum ...	July 22-27 ...	" p. 186.

1878.

Chipping-Norton ...	April 22, 23	Proc. v., p. 378.
North Downs, Surrey ...	May 6 ...	" p. 495.
Tyler's Hill, Chesham ...	May 18 ...	" p. 498.
Norwich and Cromer ...	June 10, 11 ...	" p. 513.
Hertford and Ware ...	June 22 ...	" p. 519.
The Gorge of the Mole, } Box Hill, and Dorking }	July 13 ...	Proc. vi., p. 38.
The Boulonnais; and the } Boulogne and Calais } Museums ...	Aug. 5-10 ...	" p. 39.

1879.

Weymouth and Portland ...	April 14, 15	Proc. vi., p. 172.
Crayford and Erith ...	April 26 ...	" p. 174.
Newbury, and Museum ...	May 5. ...	" p. 185.
Orpington and Knockholt	May 10 ...	" p. 189.
Watford ...	May 17 ...	" p. 191.
Knockholt and Sevenoaks	May 24 ...	" p. 194.
Bath (and Museum) and } the Vallis ...	June 2, 3 ...	" p. 197.
Sevenoaks and Tunbridge...	June 14 ...	" p. 202.
Tunbridge and Tunbridge } Wells ...	June 28 ...	" p. 204.
Tunbridge Wells and } Crowborough ...	July 12 ...	" p. 230.

		1879.	
<i>Places.</i>		<i>Dates.</i>	<i>Authorities.</i>
Ledbury, May Hill, Knightwick, Malverns, and Woolhope; and Mr. Piper's Collection		July 21-26 ...	" p. 233.

		1880.	
The Hampshire Coast ...		March 29, 30	Proc. vi., p. 316.
Camberley (Prof. Rupert Jones's Collection) and Easthampstead Plain		April 24 ...	" p. 329.
Upnor ...		May 8 ...	" p. 336.
Oxford, and Museum ...		May 17 & 18	" p. 338.
Aylesbury ...		May 29 ...	" p. 344.
Croydon and Riddlesdown		June 19 ...	" p. 372.
Redhill and Nutfield ...		June 26 ...	" p. 373.
Maidstone, (and Museum)		July 11 ...	" p. 392.
Leith Hill and Dorking ...		July 24 ...	" p. 393.
Bristol and Museum, Clevedon, Aust Cliff, Weston, Cheddar, Wells and Radstock		Aug. 16-21...	" p. 396.

VISITS TO MUSEUMS IN LONDON, &c.

		1862.	
<i>Museums.</i>		<i>Dates.</i>	<i>Authorities.</i>
British Museum	..	March 4 ...	Proc. i., p. 247.
International Exhibition	...	Oct. 23 ...	" p. 269.

		1863.	
South Kensington Museum	?	...	Proc. i., p. 358.
Museum of Practical Geology	July 18	...	" p. 351, 353.
Kew Gardens and Museum	?	...	" p. 358.
Zoological Gardens	...	?	" p. 358.
British Museum	...	?	" p. 358.
Hunterian Museum at the Royal College of Surgeons	}	?	" p. 358.

1864-6.

See p. 29, and the foregoing list, p. 49.

		1867.	
International Exhibition at Paris	}	July ...	Annual Report for 1867.

1868.

See the foregoing list, p. 49. Nothing mentioned in the "Annual Report for 1868."

1869.

See the foregoing list, p. 50. No other visits to Museums &c., reported or referred to.

1870.

<i>Museums.</i>	<i>Dates.</i>	<i>Authorities.</i>
British Mus., Geological } Department ... }	March 23 ...	Proc. ii., p. 4.
Museum of Practical Geology	April 2 ...	" p. 28.
British Museum, Palæon- } tological Dept. ... }	April 12 ...	" p. 28.

1871.

British Museum ...	March 18 ...	Proc. ii., p. 183.
Museum of Practical Geology	March 25 ...	" p. 184
Hunterian Museum, Royal } College of Surgeons }	April 18 ...	" p. 227.

Nine private Collections are enumerated (see also the other list) in the "Annual Report for 1871," p. 4, as having been visited.

1872.

Museum of Practical Geology	March 21 ...	Proc. iii., p. 38.
British Museum ...	May 11 ...	" p. 86.
International Exhibition ...	July 13 ...	" p. 123.

1873.

British Museum ...	March 27 ...	Proc. iii., p. 189.
Hunterian Museum ...	April 3 ...	" p. 190.
Museum of Practical Geology	April 21 ...	" p. 205.
The Brighton Aquarium ...	June 11 ...	Annual Report for 1873, p. 5.

Eleven local Museums and the Collections were visited this year (p. 51).

1874.

British Mus., Mineral Dept.	March 24 ...	Proc. iv., p. 91.
British Mus., Palæont. Dept.	April 18 ...	" p. 113.

And five local Collections (see the other list). "Annual Report for 1874;" "Proceed." iv., 207.

1875.

Museum of Practical Geology	April 3 ...	Proc. iv., p. 281.
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For local Collections, see the other list, p. 52.

1876.

British Museum ...	March 18 ...	Proc. iv., p. 480
Museum of the Geologi- } cal Society ... }	April 1 ...	" p. 483.

For local Collections, see the other list, and "Annual Report for 1876," p. 6.

1877.		
<i>Museums.</i>	<i>Dates.</i>	<i>Authorities.</i>
British Museum; Fossil } Marsupials ... }	March 17 ...	Proc. v., p. 103.
British Museum; Fossil } Fishes ... }	March 24 ...	" p. 106.
British Museum; Fossil } Reptiles ... }	April 14 ...	" p. 122.
Hunterian Museum ...	May 12 ...	" p. 140.
1878.		
British Museum; Ceratodus	March 16 ...	Proc. v., p. 363.
British Mus.; Botan. Dept.	March 23 ...	" p. 365.
Crystal Palace, Sydenham	April 6 ...	" p. 377.
Zoological Gardens ...	June 5 ...	" p. 511.
1879.		
British Museum; Dinosauria	March 15 ...	Proc. vi., p. 151.
British Mus.; Cephalopoda	March 29 ...	" p. 151.
Hunterian Museum ...	April 5 ...	" p. 171.
1880.		
Museum of Practical Geology	March 13 ...	Proc. vi., p. 311.
British Museum ...	April 10 ...	" p. 321.
Kew Gardens and Richmond	June 19 ...	" p. 372.

APPENDIX III.

THE GEOLOGISTS' ASSOCIATION REPRESENTED AT THE COMMEMORATION OF THE GEOLOGICAL SOCIETY OF FRANCE, ON APRIL 1st, 1880, BY THOMAS DAVIDSON, ESQ., F.R.S., F.G.S., Hon. Mem. Geol. Assoc., &c.

In answer to a notification from Mr. T. DAVIDSON, F.R.S., that he was about to attend the Half-century Commemoration of the Geological Society of France as Delegate from some of the Scientific Societies of London, Edinburgh, Glasgow, and Dublin, and would be pleased to represent also the Geologists' Association on that occasion, the following letter was written to him —

"MY DEAR DAVIDSON —

"I hasten to reply to your letter of yesterday, by saying that the Geologists' Association in general, and its President in particular, will be greatly obliged by your representing us at the approaching Commemoration of the Geological Society of France, and by expressing our cordial

sympathy with that excellent Society in the pleasure and satisfaction arising from a knowledge of the scientific good it has accomplished in its Fifty Years of existence, and of the goodwill and friendly feeling it has cultivated among Geologists of many lands for so many years. The gratitude we owe to many of its earliest Members is the same as that which we owe to English Geologists of repute who have passed away, but have left good words and works behind for us.

"We ourselves (the Geologists' Association) held lately a Memorial Dinner in honour of our arriving at the age of Twenty-one Years; and if we had to congratulate ourselves on a youth well spent, your esteemed Society must indeed be proud of the fruits of their manhood, and of the many rising Geologists affiliated to the Society. You may well look forward to very many successive generations of good and true Geologists pursuing their useful work and bringing honour to the Geological Society of France.

"The Geological Association was founded in January, 1859 [December 1858] by many young men wishing to learn Geology economically and by the mutual help of talking over specimens and at geological localities, with real sections before them, and with other aids to mutual improvement arising from intercommunication both in London and the country. They began with about 250 Members, and we have now more than 400.

"We had more than 100 at the Memorial Dinner on the 4th instant, and some excellent speeches were given by Hyde Clarke, Wiltshire, A. Tylor, Prof. Owen, John Jones, Lobley, James Parker, Prof. Morris, Carruthers, Etheridge, Prof. Bonney, H. Woodward, E. B. Tylor, C. C. King, and others.

"You will kindly oblige me by personally remembering me, with kind regards and good wishes, to Daubrée, Delesse, MM. Milne-Edwards, *père et fils*, Gaudry, Hébert, Meunier Chalmas, E. Sauvage, Gosselet and Barrois of Lille, Louis Lartet of Toulouse, Barrande, Dollfus, and others who may hold me in kind remembrance, whether of France, Germany, Italy, or elsewhere, should you encounter them.

"Believe me, Dear Davidson,

"Yours very truly and obliged,

(Signed)

"T. RUPERT JONES,

"Pres. Geol. Assoc."

"Camberley, Surrey,

"March 11, 1880."

Mr. Davidson, after his return from Paris, describes, in a letter to the President, the very distinguished reception he met with as the Delegate of ten of the chief Scientific Societies in Great Britain and Ireland, and the evident esteem and friendship felt by the savants of France for their British collaborateurs. An official account of Mr. Davidson's mission as Delegate to the Commemoration is given in the "Quart. Journ. Geol. Soc.," No. 143, for August, 1880.