the support they give to the opinion that the diastatic property is connected with the degree of solubility of the albuminoid matter, and in the fact that this may result as well from the growth of an organism foreign to the grain as from the germination of the embryo itself.

R. W. ATKINSON

College of Science, Newcastle-on-Tyne, September 19

Integrating Anemometer

PERMIT me to observe that the integrating anemometer devised by Mr. Shaw and Dr. Wilson, an abstract of whose paper, read before the British Association (Section A), appeared in your issue of September 15 (p. 467), is in principle and in several of its details identical with a machine intended for the mechanical reduction of anemograms of the Kew pattern adopted by the Meteorological Office, a description of which, with drawings, was placed by me in the hands of Mr. R. H. Scott, and by him transmitted to Prof. Stokes in February last. It is however to be noted that there is a fundamental objection to the mode in which such machines deal with the data submitted to them, namely this, that the air does not, in fact, move parallel to itself, as these integrators and Lambert's well-known expression assume that it does. In other words, the integrator should concern itself only with those particles of air which are *passing* the anemometer at each instant, *i.e.* with the directions and velocities of successive elements of the wind at a fixed point. Dr. von Oettingen (Wild's "Repertorium für Meteorologie," Band v.) has shown this.

CHARLES E. BURTON

38, Barclay Road, Walham Green, S.W., September 22

Red Rainbows

THE accounts in NATURE, vol. xxiv. pp. 431, 459, of pink and red rainbows induce me to mention one of a rose colour which was seen in this neighbourhood at sunset yesterday afternoon. Just before setting, the sun shone out with a pale golden glow, but about the north and east there was a general cloudiness, dark inky purple with light masses of cloud floating from north to south, and as the sunset glow lost its golden and assumed a ruddy appearance, these floating clouds took the same colour, the general cloudiness beyond retaining its purple character, and on looking north-east there was the rainbow, or rather the lower part of the left hand of the bow, almost perpendicular, but inclining, of course, to the east; the general colour was rose, but along the inner side the prismatic colours were plainly seen. It lasted for about five minutes, and was seen by others who were just giving up shooting, about a mile from the house. The clouds in the west soon put on a stormy appearance, and rain began to fall.

A. TREVOR CRISPIN

Hyde End, Brimpton, Reading, September 23

Hay Fever

IN Mr. Hannay's letter on Hay Fever (p. 485) two facts are mentioned, viz., that "those who are afflicted with hay fever are so owing to the tenderness of the internal lining of the nose," and that "in Scotland hay fever is practically unknown." By connecting these facts a probable remedy is suggested, viz., the use of snuff. That this habit destroys the natural tenderness of the internal lining of the nose is evident from the insensibility of the snuff-taker to doses that furiously irritate the nostrils that have been differently educated. As Scotchmen generally are either snuff-takers themselves or descended from snuff-takers, a direct or hereditary insensibility may explain their immunity from this affliction. Not being one of its victims, I am unable to try the experiment, which should be started a few weeks before the season commences, in order to gradually develop the acquired insensibility.

W. MATTIEU WILLIAMS

Stonebridge Park, Willesden

IN NATURE (vol. xxiv. p. 485) Mr. Hannay remarks that "no remedy yet published will cure hay-fever." Has Mr. Hannay read Dr. Blackley's "Hay Fever" (Baillière, Tindall, and Cox, second edition, 1880)? It will be found that Dr. Blackley has used the treatment mentioned in NATURE, viz. the protection of the mucous membrane of the nose from pollen, with success both on himself and other persons subject to the fever, and Mr. Hannay's experiments offer another proof of the efficiency of this treatment. There is a short article on the

subject in the *Lancet* of July 16, p. 82, by Dr. Thorowgood, and another by Dr. Blackley in the *Lancet* of August 27, p. 371. Mr. Hannay's treatment is essentially the same as that published by Dr. Blackley, though in the latter the inconvenience of plugging the entrances to the nasal ducts, and of the stoppage of the proper air-passages, is avoided, whilst the mucous membrane of the eyes is also protected.

M. C.

September 24

Electric Light in Collieries

THE writer of the article in NATURE, vol. xxiv. p. 383, has overlooked the long account given in the *Times* of June 14, 1881, of the visit paid by the Accidents in Mines Commissioners to the Pleasley pit, near Chesterfield, where the first important application of the light was made nearly three months ago. Credit should be given to Mr. Swan and to Messrs. Crompton and Co., who for more than a year have been experimenting with, and perfecting, the lamps, &c., rather than to those who may have the good fortune to adopt that which the Pleasley trials proved to be so perfect; and, as one who was present with the Royal Commissioners, I think it only fair to call your attention to what is probably a slip in your report.

SESAMY

London

THE ORIGIN AND FUNCTIONS OF THE BRITISH ASSOCIATION

MY attention has been called to a pamphlet published by Mr. W. H. Harrison, purporting to contain a correct account of the first founding of the British Association for the Advancement of Science. I am sure that Mr. Harrison, in common with such other readers of NATURE as take an interest in the affair, will be glad to hear my father speak for himself upon a matter which Mr. Harrison, with the amount of information at his disposal, could only treat of as a subject of speculation. The paper which I inclose was addressed to Sir Edward (then Colonel) Sabine; and I think I may claim for it that it is written with much clearness and impartiality. You may perhaps also consider the letter of importance at this moment, as pointing out what was the view taken in those early days of the proper functions of the Association. The wisdom of this view is abundantly evident now that science has been so widely popularised, and that little more of real work remains for the Association beyond the just apportionment of its funds for scientific purposes. In respect to the numerous scientific letters addressed to my father by Buckland, Murchison, Smith, Sedgwick, Scoresby, Humboldt, Wollaston, Davy, Sabine, Faraday, Brewster, Babbage, Prout, Herschel, Whewell, Forbes, Liebig, De la Bêche, Lyell, and others, I hope some day to cause a selection of them to be produced, in a form which may be of interest, and perhaps of use to the public.

E. W. HARCOURT

Nuneham Park, Abingdon, September 23

Account of the Formation of the British Association by the Rev. W. V. Harcourt

"TO COLONEL (AFTERWARDS SIR EDWARD) SABINE

"I HAVE received from the President of the Philosophical Society of Hull (1853), where you know the British Association is about to meet, a memoir which he has put into public circulation descriptive of the nature of that body, its early history, and the specific services rendered to it by individuals.

"The task which Mr. Frost has undertaken is one of a difficult and delicate kind; and I was not surprised to find his description of circumstances with which he had no means of being intimately acquainted somewhat inaccurate and defective.

"Mr. Frost informed the public that when in 1831 Sir David, then Dr., Brewster, made proposals that meetings for promoting science by *réunions* of scientific men similar to those which prevailed abroad should be held in England and commenced at York, the country had been duly prepared and predisposed for such co-operation by the severe strictures which he had then recently passed on the actual state of science in this country, and on the conduct and character of its scientific institutions, and in

particular its universities. It would have been better if these strictures, now forgotten, had not been adverted to, especially with reference to the Association. The truth is, they formed the chief difficulty in carrying such a proposal as had been made into effect. It was clear that any attempt at scientific association not headed or joined by many persons who could not but feel aggrieved by the strictures referred to, and who have been since among the chief lights of the institution, would probably have led to results more mischievous than beneficial to science.

"As soon as Dr. Brewster's proposal was made, and before it could be acceded to, I thought it needful to enter into correspondence with numerous individuals thus situated, and finding that, agreeing for the most part in the opinion that such *réunions* would operate for the benefit of science, they lost sight of all personal feelings, and consented to co-operate on certain conditions, I proceeded to draw up the scheme which was ultimately followed.

"It is a mistake to consider this Association as having been formed on any foreign model. My conception of the manner in which a great scientific combination might be effectually worked in England was founded on different principles. No one could be insensible of the advantage to be derived from bringing men of science together to confer and discuss; but even this point I considered it impossible to gain without extending our views considerably further. I did not believe that the great labourers in science would undergo the inconvenience and interruption of travelling to various places to meet one another, as a continuous system, on mere invitation, and for the sole purpose of discussion, and I knew that if such men should absent themselves from the meetings, those meetings would become no better than *foci* of *sciolism* and vanity.

"I therefore proposed to found the Association on the principle of *acquiring funds* to be devoted to the expenses of unremunerative objects of science, of levying such funds from the multitudes of persons who might be expected to feel interested in scientific discussions at populous places, and giving the appropriation of them first to the selection of committee-men attached to the various sections of science, and secondly to the final determination of the whole body of actual scientific labourers at the meeting assembled in general committee.

"To this principle in the constitution of the British Association its success has been mainly due. To this principle we owed, for instance, the unintermitting attendance, to the time of his lamented death, of one of its ablest members, Mr. Baily, under whose direction one of the largest applications of its funds was made.

"These grants of assistance, conjoined with requests to individuals to execute particular tasks for the interests of science, have given the exertions of the Association as a body a direct utility peculiarly its own, tending far beyond the promiscuous discussions of the sections both to advance material objects and to maintain the attendance at its meetings of persons pursuing such objects.

"The wealth, the public spirit, the intelligence, the curiosity, of the great cities of the United Kingdom, offered great encouragement to the financial part of this plan, which by its adoption has enabled the Association to carry out its entire objects not only in regard to liberal grants for scientific objects and in defraying all expenses incidental to its operations and essential to its permanence, but even in maintaining an establishment of its own for experimental research.

"This plan, proposed by me at York, was adopted in all its detail, and my acceptance of the office of general secretary enabled me, with able and zealous co-operation, to work a machine of great magnitude and complexity with a success surpassing my expectations from 1831 to 1837, during which years I was charged with its chief management, and revised all that was printed in its name.

"The cordial reception of the first meeting of the British Association by the city of York, the hospitality of Bishopthorpe, the countenance of the Royal President of the Royal Society, the presence of Lord Fitzwilliam, the aid of Prof. Phillips, the attendance of the distinguished philosopher Brewster, with Brisbane, Robison, Forbes, and Johnston, the attendance from London of Murchison, from Dublin of Provost Lloyd, from Oxford of Daubeny, from Manchester of Dalton, the concurrence of Buckland and Whewell and Conybeare, and many others of known repute, these incidents helped to launch the vessel; of the early history of which, if any one would write accurately of that part of its history, he may record that

Brewster first proposed that a craft should be built wherein the united crew of British science might sail, and manfully embarked in it all his high scientific reputation; but for myself I must be allowed to claim that I manned the ship, that I constructed her charts, and piloted the vessel for six years. The labour which I bestowed on this service has since been divided among more capable hands; but none of us could have worked the vessel at all without the constant and invaluable helping hand of the assistant-secretary, Prof. Phillips.

"I am induced to put down on paper and transmit to you, as actual President of the Association, a statement of the real facts, without the least intention, however, of involving either you or any one else in controversy on the subject."

THE INTERNATIONAL EXHIBITION AND CONGRESS OF ELECTRICITY AT PARIS

THE Exhibition must be pronounced a great success.

Even those who are well read in electricity are taken by surprise at the display of power presented; and the first favourable impression is strengthened as further examination discloses the immense variety of applications exhibited and the beauty of much of the machinery.

The first thing seen on approaching the Exhibition from the city is the Siemens electrical railway. It is about a quarter of a mile long, with a sharp turn at one place. The carriage is a good-sized tramcar, and presents no special feature to a casual observer, except two wires which travel with it, and connect it by running contacts with two aerial guides suspended on posts like telegraph posts. The prime mover is a steam-engine near the centre of the Exhibition, which drives a dynamo-electric machine. The continuous current which the latter furnishes is led to the aerial guides, and is conducted by the two travelling wires to an electro-magnetic engine beneath the floor of the carriage which drives the wheels. Passengers are conveyed by this tramcar at a small charge between an outdoor station and a station just within the Exhibition.

On entering the building by this tramway one of the most prominent features is the collection of powerful engines which occupies the whole of the space under one of the side galleries. They are for the most part dynamo-machines driven by steam-engines. The dynamos are close to us as we walk down the main passage on this side; the steam-engines, which drive them by belts, are a little further back; the furnaces and boilers are close to the outer wall. Wires are led from the dynamos to electric lamps, some of them close at hand, and others on the opposite side of the building, or overhead.

Every variety of electric lamp is of course to be seen, and their regulators furnish a very interesting study. To illustrate their diversity we may mention that in the Brush system the regulation depends on the variation of resistance in a series of carbon plates as they are more or less strongly pressed together; in the Crompton it depends on the frictional support of a vertical metallic rod by two pieces which pinch it between them, and pinch it more or less strongly according to the strength of the current; while in the Pilsen lamp a spindle-shaped piece of iron is the common core of two electromagnets one above the other, and is drawn up or down as the contact in one or the other prevails. Then again there are the Serrin and other well-known forms of lamp, in which the carbons are caused to approach by means of clockwork, which is regulated by the strength of the current. There is the Jablochkoff candle, in which the two carbons are parallel and separated by plaster of Paris; the Jamin, which is something like the Jablochkoff, with the plaster of Paris removed, and only air between the carbon pencils; the Werdermann, in which a carbon point below bears against a flat block of carbon above (the point being the positive, and the block the negative terminal); the Joel, in which a carbon point below bears against a disk of copper