	Apparent Zenith distance.	Azimuth.
Meteor appeared, .	70° 37'	North 2° 59' East.
Meteor burst, . .	57 40	„ 7 48 „
Meteor disappeared,	47 30	„ 10 49 „

The station where the meteor was seen is situated very nearly in latitude $56^{\circ} 13' 5''$ N., longitude $12^{\text{m}} 2^{\text{s}}.6$ W.

It is worthy of remark, that as the meteor was seen at $11^{\text{h}} 15^{\text{m}}$, Greenwich mean time, if allowance is made for the longitude of the station and the equation of time, it follows that it appeared about 48^{m} before apparent noon, or about that time of day when the sun shines most brightly. Now, while many accounts are extant of meteors which have appeared during the day, and have attracted attention by exploding audibly, or have been accompanied by the descent of meteoric stones, I was not aware that any object like the meteor of the 30th September, resembling so closely the more tranquil phenomena of shooting stars, had been described as being seen within an hour of noon, and in bright sunshine. I was, therefore, desirous of obtaining other observations of the meteor, and for that purpose I sent a short account of it to one of the Edinburgh newspapers, requesting the favour that any observations of it made elsewhere might be communicated to me, in order that they might be incorporated with this narrative. I have not, however, had a single communication on the subject,—a result which, although it is to be regretted, yet does not surprise me; for, from the faint illumination of the meteor, it was an object which would scarcely *attract* observation, although it was easily perceptible to an eye which, like my friend's, was already directed to the region of the sky where it appeared.

3. On the Mechanical Action of Heat. By W. J. Macquorn Rankine, C.E., F.R.SS. Lond. & Edin., &c.

Section VI. Subsection 4.—On the Thermic Phenomenon of Currents of Elastic Fluids.

Supplement.—Of a Correction applicable to the results of the previous reduction of the experiments of Messrs Thomson and Joule.

In investigating the phenomena of the free expansion of gases in the previous part of this paper, they had been considered as expand-

ing, without receiving or giving out energy in any form ; so that the equation taken to represent their condition was

$$\Delta \Psi = 0.$$

This condition was realized in the early experiments of Mr Joule, where, by the sudden opening of a stopcock, air previously confined in one vessel was allowed to fill another also ; but it is not exactly realized in the experiments now in progress by Messrs Joule and Thomson, for which the correct equation is

$$\Delta (\Psi + P V) = 0.$$

Hence the approximate positions of the point of absolute cold calculated by means of the former equation, require a small correction. The author computes the values of this correction for two series of experiments, made at a high and a low temperature respectively ; and finds them to be—

$$\begin{aligned} &+ 0^{\circ}05 \text{ Centigrade for the high temperature,} \\ &- 0^{\circ}002 \text{ Centigrade for the low temperature ;} \end{aligned}$$

so that for the experiments now in question, the correction is practically inapplicable. As it may, however, have a sensible amount for greater ranges of temperature and pressure than those which occur in the particular experiments referred to, and for gases denser than atmospheric air, the author explains how it is to be calculated.

The following Donations to the Library were announced :—

Lectures on Quaternions. By Sir William R. Hamilton. 8vo.—

From the Author.

Fourth Report of the Council of Management of the Architectural Institute of Scotland. 8vo.—*From the Institute.*

Memoirs of the American Academy of Arts and Sciences, (N. S.) Vol. V., Part 1. With Map of Toronto. 4to.

Proceedings of the American Academy of Arts and Sciences. Vol. II. From May 1848 to May 1852. 8vo.—*From the Academy.*

Journal of Agriculture, and the Transactions of the Highland and Agricultural Society of Scotland. No. 44. (N. S.) 8vo.—*From the Society.*

Journal of the Statistical Society of London. Vol. XVI., Part 4. 8vo.—*From the Society.*

- The American Journal of Science and Arts. Conducted by Professors Silliman and Dana. Second Series. No. 49. 8vo.—*From the Editors.*
- Journal of the Horticultural Society of London. Vol. IX., Part 1. 8vo.—*From the Society.*
- Journal of the Asiatic Society of Bengal. Edited by the Secretaries. No. 5. 1853. 8vo.—*From the Society.*
- The Assurance Magazine, and Journal of the Institute of Actuaries. No. 14. 8vo.—*From the Institute.*
- Thirty-third Report of the Council of the Leeds Philosophical and Literary Society. 1852–3. 8vo.—*From the Society.*
- Jahresbericht über die Fortschritte der reinen, Pharmaceutischen und Technischen Chemie, Physik, Mineralogie und Geologie, &c. Herausgegeben von Justus Liebig et Hermann Kopp. 1847–50. 8vo.—*From the Editor.*
- Bulletins de l'Academie Royale des Sciences, des Lettres et des Beaux Arts de Belgique. Tome XX. 8vo.—*From the Academy.*
- Flora Batava. 174 Aflevering. 4to.—*From the King of Holland.*
- Mémoires Couronnées et Mémoires des Savants Etrangers, publiés par l'Académie Royale des Sciences de Belgique. Tome V. 2de Partie. 8vo. Two copies.—*From the Academy.*
- Memorie della Accademia delle Scienze dell' Istituto di Bologna. Tomo III. 4to.—*From the Academy.*
- Acta Societatis Scientiarum Fennicæ. Tom. III., Fasciculus 2. 4to.—*From the Society.*
- Notiser ur Sällskapets pro Fauna et Flora Fennica Förhandlingar. Pt. 2. 4to.—*From the Society.*
- Della Instituzione de' Pompieri, dal Francesco del Giudice. 4to.
- Rendiconto delle Sessioni dell' Accademia delle Scienze dell' Istituto di Bologna. 1851–2. 8vo.—*From the Academy.*
- Mémoires de l'Académie Royale des Sciences, des Lettres, et des Beaux Arts de Belgique. Tome XXVII. 4to.—*From the Academy.*
- Mémoires sur les Variations Périodiques et non Périodique de la Température. Par A. Quételet. 4to.
- Observations des Phénomènes Periodiques. Par A. Quételet. 4to.—*From the Author.*
- Mémoires de la Société des Sciences Naturelles de Cherbourg. 1er. Vol. 2e Liv. 8vo.—*From the Society.*

A History of the Fishes of Massachusetts. By David Humphreys Storer, M.D., A.A.S. 4to.—*From the Author.*

Maritime Conference, held at Brussels, for devising an uniform System of Meteorological Observations at Sea, August and September 1853. 4to.—*From the Belgian Academy.*

Monday, 20th March 1854.

SIR T. M. BRISBANE, Bart., President, in the Chair.

The following Communications were read :—

1. On the Total Invisibility of Red to certain Colour-Blind Eyes. By Dr George Wilson.

After some remarks on the peculiar difficulties which attend investigations into the functions of the eye, the author observed, that by far the most remarkable variety of colour-blindness, in a scientific point of view, is that which shows itself in the identification of red with black. This appeared to have been overlooked by previous observers, or at least only cursorily described. The probable causes of this neglect were noticed; and the author then proceeded to detail the experience of some twelve parties by whom various objects of a red, crimson, or scarlet colour were mistaken for black, and appeared, from the testimony of those who committed the mistakes in question, to have made neither a colorific nor a luminous impression on the retina. It was further shown, that though the fact had not attracted attention, the published cases of colour-blindness supplied examples of the same blindness to red; and that Dalton, although he had apparently ascertained his own freedom from the blindness in question, had incidentally supplied proof that the red alike of the solar spectrum and of coloured objects frequently appeared to him as dark or nearly black.

Experiments were also recorded, which had been made by the author, with the assistance of Professor Kelland, on the visibility of prismatic spectra to persons affected by colour-blindness, one of whom was found unable to perceive from $\frac{1}{6}$ th to $\frac{1}{3}$ th of the red end of the solar spectrum, whilst the other could not discern $\frac{1}{3}$ d of the