

the corona is cosmical, solar, and the denser part of the zodiacal light,* might expect the latter rather to show the corona's green line, viz., 1474 (Kirchhoff).

This, however, the zodiacal light, according to M. Angström, does not. Is the zodiacal light then telluric and auroral, not solar and coronal? The measurement of the *place* of its green line should settle at once this most important and extensive physical question; and if the line be at any time visible at all, the large spectral distance between 1249 and 1474 (Kirchhoff's scale) would be sensible in the simplest apparatus. Yet, in these high latitudes the zodiacal light is always so extremely faint, so frequently altogether masked by auroral glows, and as yet, for its spectrum, depending, so far as I know, on only one observer, and he residing in quite an aurora-ridden part of the world, that it would seem to be a perfectly fair question to ask, "if any one else, besides the distinguished Natural Philosopher at Upsala, has observed the spectrum of the zodiacal light; and if so, how and where?"

C. PIAZZI SMYTH

Royal Terrace, Edinburgh, April 14

* [We venture to doubt this.—ED.]

Aurora by Daylight

I SEE that more than one of your correspondents in December numbers dispute the possibility of an aurora being seen by daylight. It doubtless is a rare occurrence, but two cases of the kind have come under my notice.

In December last my son saw what he took to be an aurora a little before sunset. He was at the time about three miles from home, and he had it constantly before him during his walk homewards, and saw it more and more developed as the darkness increased, so that there can be no doubt of the appearance before sunset being identical with what proved to be, as the night advanced, one of the most brilliant displays which we have had during a year very prolific in auroras. He states that after the sun had set, but whilst it was still quite light, the bright rose colour which distinguished that aurora was distinctly visible. The streamers that night proceeded from all parts of the heavens, meeting almost in the zenith, but what is very unusual, they were very much brighter in the east and south-east than in any other direction, which is probably the reason why they were so clearly visible whilst the sun was in the opposite quarter.

The other case came under my own observation in September 1849. Immediately after the sun had set, with a perfectly clear sky, I noticed three slightly diverging beams of light on the western horizon. One might almost have taken them for those beams from a setting sun which one sees much more often in pictures than in nature, had it not been that they did not emanate exactly from the spot where the sun had set, that they had an evident motion to the southward, and that two of them extended to the zenith, and finally down to the eastern horizon. It proved to be the most symmetrical auroral arch I ever saw. The perfect horizon I had to the west, and the straightness of its well-defined edges, joined to the facility which the double arch afforded of measuring the distance between the middle of each, immediately struck me as affording an opportunity of calculating its elevation above the earth, upon the supposition that the tapering away towards the horizon was the effect of perspective alone. I took steps therefore to measure the apparent width in the horizon and overhead, and also its rate of motion to the southward in both places, and by both methods the result was about 8 to 1. From these data, upon the assumption that it was a double ring everywhere equidistant from the earth's surface, and moving parallel to itself, I calculated the elevation, which came out 97 miles, and its rate of motion to the southward 656 miles per hour, the auroral meridian being N. 13° 15' E., and the inclination of the plane of the arch to my horizon 94° 55'. These figures, whatever reliance can be placed on them, have nothing to do with the present question further than to show how bright the object must have been thus to attract my attention, and that, although the sun had set, there was still daylight enough for me to see the second hand of my watch, and to note the objects on an horizon some three or four miles distant, by which I measured the progress of the base of the arch, and the bearings of which I took the next day. Before it became really dark, the arch had become irregular, and detached streamers showed themselves in the usual form.

Ottawa

JOHN LANGTON

UNIVERSITY INTELLIGENCE

OXFORD

QUEEN'S COLLEGE.—Mr. Charles Thomas Blanchard of Clifton College, was elected to a Scholarship in Natural Science in this College on Saturday last. *Proxime accessit*—Mr. William Percy Ashe, of Magdalen College School.

CORPUS CHRISTI COLLEGE.—There will be an Election to a Natural Science Fellowship in this College at the beginning of next Michaelmas Term. The examination will be special y in Chemistry, and will commence on Monday, Oct. 9. Candidates must have passed all the examinations required by the University for the degree of B.A., and must not be in possession of any benefice or property which would disqualify for retaining a Fellowship. Candidates are requested to communicate with the President, either personally or by letter, at their convenience, before the end of Act Term.

Natural Science Lectures

The following Lectures will be given in addition to those noticed in our number for last week :—

Chemistry. Mr. Wyndham on the Elements of the Nitrogen, Boron, and Carbon groups, and their Combinations, on Thursdays and Saturdays at 11 A.M., at the University Museum.

Physiology. On General Physiology, with special reference to the microscopical anatomy and physiological chemistry of the elementary tissues. By Mr. Chapman. Mondays, Wednesdays, and Fridays, at 10 A.M., at the Magdalen College Laboratory.

Physics. On Elementary Mechanics and Hydrostatics. By Mr. Abbay. These lectures are free by mutual arrangement to members of these colleges at which either of these gentlemen is a lecturer, viz., to members of Merton, Magdalen, Jesus, and Wadham Colleges.

CAMBRIDGE

The following lectures in Natural Sciences are to be delivered at Trinity, St. John's, and Sidney Sussex Colleges during Easter term, 1871 :—

On Heat. (For the Natural Sciences Tripos.) By Mr. Trotter, Trinity College, Monday, Wednesday, Friday, at 10, commencing Friday, April 28.

On Electricity and Heat. (For the Special Examination of the B.A. Degree.) By Mr. Trotter, Trinity College, Tuesday, Thursday, Saturday, at 10, commencing Tuesday, April 25. Students of Colleges other than Trinity, St. John's and Sidney, can be admitted on payment of a fee.

On Chemistry. By Mr. Main, St. John's College. Tuesday, Thursday, Saturday, at 12, commencing Thursday, April 27. Attendance on these lectures is recognised by the University for the certificate required by medical students previous to admission for the first examination for the Degree of M.B.

Instruction in Practical Chemistry will also be given.

On Geology. By Mr. Bonney, St. John's College.

1. **Palæontology.** Wednesdays and Fridays, at 9, commencing Friday, April 28.

2. **Lyell's Principles of Geology.** Tuesdays and Thursdays, at 9, commencing Thursday, April 27.

3. **Elementary Lectures.** Tuesdays and Thursdays, at 11, commencing Thursday, April 27. Students of other Colleges can be admitted to these lectures on payment of a fee.

On Botany (chiefly systematic and physiological.) By Mr. J. W. Hicks, Sidney College. Tuesday, Friday, Saturday, at 12, beginning Friday, April 28.

On Physiology. The Trinity Prælector in Physiology (Dr. M. Foster) will probably give a short course on Embryology at the New Museums, of which notice will be given.