

tions of the zodiacal light, or to "Chambers's Astronomy," 3rd edition, p. 92, where a short chapter is devoted to the subject.

Speaking from my own experience, the zodiacal light is best observed in this neighbourhood during the clear evenings of February or March, in the late twilight, and of course in the absence of moonlight.

On referring to my copy of the *Astronomical Register* for 1875, vol. xiii. p. 196, I find a letter from Mr. T. W. Backhouse in reply to a previous communication from Canon Beechey in the same volume, p. 174, describing what appears to have been a much finer display of this sunset phenomenon as seen by the rev. gentleman from Downham, Norfolk, than either your correspondent or myself witnessed.

Mr. Backhouse states: "It is purely an atmospheric phenomenon ascribed to the sun shining on particles of water or ice."

May I ask if the above explanation is an established fact or only a theory?

I shall be glad if you receive and can make room for the accounts of other observers, as I cannot think the appearance is a very common one—at least not in this neighbourhood.

Hull, April 24

WILLIAM LAWTON

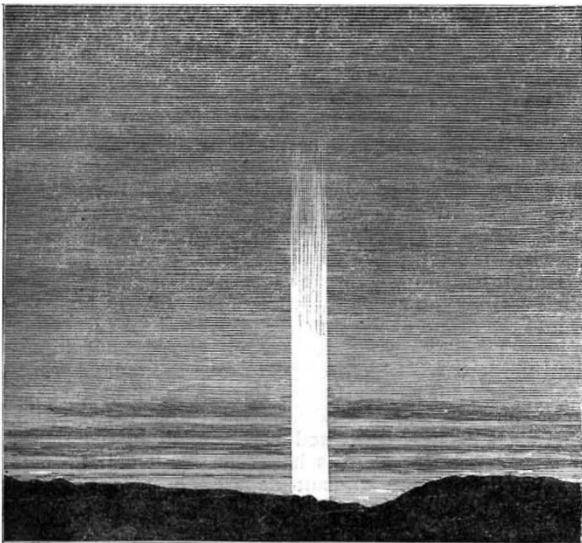
REFERRING to the letters in your columns on this subject, I beg to forward two photographs of the sun, which show distinct horns of light on each side of the disk. They were taken—the sun high in the heavens at the time—some two months ago in a simple camera, without any special arrangement, except a rapid shutter, but the development was undertaken with some care, and arrested as soon as the light fleecy clouds around made their appearance.

H. B. P.

Blackheath, April 27

[We have received the photographs, which are certainly very remarkable if our correspondent can certify that the strange prolongations which appear on them are special to them, and not in any way dependent upon any possible reflection from the lenses employed.—ED.]

THE phenomenon described on pages 580 and 605, under the heading "The Zodiacal Light (?)" was that generally known as a "Sun Pillar." I send herewith an engraving of one seen from Sidmouth in 1871, full descriptions of which were given in the *Meteorological Magazine* for May, June, and July of that year.



Sun Pillar seen near Sidmouth, April 4, 1871.

I believe that it is merely a portion of a halo passing vertically through the sun; in the recent case, that portion of the halo which was above the sun was alone seen, sometimes the portion below it is seen alone, and occasionally both are visible, together with a parhelic circle (or parts of one), and then of course we have the rare phenomenon of the sun as the centre of a luminous cross. I have called this complete phenomenon of

the solar cross rare, for I know of only three occasions of its being seen, and even these I have not verified in the originals, but those interested may search in *Hugueni Opuscula posthuma*, ii. 48, for the details of the phenomenon seen in Cassel in January, 1586, by Roth; and in the *Mém. de l'Acad. des Sciences* for 1693 and 1722, for descriptions by Cassini and Malézieu.

G. J. SYMONS

62, Camden Square, N.W.

THE curious luminous projection after sunset on the 6th inst., noticed by several of your correspondents, was also seen for some time very soon after sunset in Herefordshire. Its shape was somewhat like a vertical pillar of soft, hazy, yellowish, luminous light, about the width of the solar disk, 10° in height above horizon, and finishing rather abruptly with a conical termination in a clear sky.

R. P. GREG

Coles, Buntingford, Herts, April 29

ALLOW me to call the attention of such of your readers as are interested in the above phenomenon, to a communication from Mr. J. J. Murphy of Belfast, in your issue of July 13, 1876, and to another from myself, a fortnight later, describing a sun pillar seen in the north of Ireland on June 27, 1876.

R. V. D.

Beragh, co. Tyrone, April 28

### Mock Moons

THE mock moons mentioned in your last week's issue (p. 606), by Mr. Mott, were seen here. The circle subtended an angle of 50°. When first seen, a line drawn through the mock moons passed through the moon itself. At 11 p.m. such a line was 3° above the moon. At 1 a.m. the appearance was as at first. This change of level of the refracting cloud is what Mr. Mott alludes to when he says it "seemed to be unaccountably out of place." I was not aware that there was any fixed place for the brighter portions of the halo.

SM.

Temple Observatory, Rugby

### The Freshwater Medusæ

IT may interest some of your readers to know that the little freshwater Medusæ (*Limnocoelium Sowerbii*), which appeared in the Victoria Regia Tank here on June 9, 1880, for the first time, again on June 12, 1881, and not at all during 1882, appeared again in the tank on Saturday morning, April 28, many of them being full grown individuals. The tank, which remains empty during the winter, was filled with water on March 8.

April 30

W. SOWERBY

### The Circles of a Triangle

CANNOT the method of "portmanteau" words be advantageously applied? I beg leave to suggest the following names: *circumcircle*, *incircle*, *excircle*, and *midcircle*; these are for speech, in print or writing they might appear C $\odot$ , I $\odot$ , E $\odot$ , M $\odot$ .

April 28

W. H. H. H.

### Flight of Crows

IN watching crows as they fly overhead, I often think they are not flying straight forward, but have the line from head to tail at an angle of about fifteen degrees with the line of flight. Can this be corroborated? I do not like to trust my own observing powers in such a matter.

JOSEPH JOHN MURPHY

Old Forge, Dunmurry, co. Antrim, April 24

### METAMORPHIC ROCKS OF SCANDINAVIA AND SCOTLAND

MUCH interest attaches to the researches of the Swedish geologists among the older crystalline rocks of Scandinavia. In the year 1873 Mr. A. E. Törnebohm published an important paper in which he showed that in the high grounds of Sweden Lower Silurian rocks, with recognisable fossils, pass up conformably into a vast overlying series of quartzites, schists, and gneisses. These metamorphic rocks were divided by him into two groups—the Seve group, composed mainly of quartzites and schists, and the Kõli group, consisting