writer and other observers on the night of April 19, several brilliant meteors having been observed. If the computed time of the maximum for that night be correct, viz. 10h. 30m., it would not, of course, have been possible for observers situated near the longitude of Greenwich to witness the display in its entirety.

The Lyrid activity on the night of April 21, judging from Mr. Alphonso King's letter, appears to have been somewhat exceptional, and scarcely inferior to that observed on April 22. It may be interesting to note that the well-known continental observer, Prof. A. A. Nijland, states that the night of April 19, as well as that of April 20, was almost constantly and entirely overcast, and that not a single Lyrid was observed at Utrecht in 1903, though the night of April 21 was both clear and moonless. This negative result might have been anticipated from the forecast which appeared in NATURE last April. JOHN R. HENRY.

Dublin, September 21.

Glow-worm and Thunderstorm; also Milk.

IN the *Daily News* of July 14 is printed an observation by a Mr. Haswell, of Handsworth, which bears the marks of genuineness, that during a thunderstorm a glow-worm extinguished its light for a second or a second and a half before each flash, relighting at an equal interval after the flash. May I ask if this has been noticed by anyone else?

It may also be worth while for someone to examine whether radium can assist milk to turn sour, or can otherwise influence organic processes of that kind.

OLIVER LODGE.

ILL-HEALTH OF THE RAND MINERS.[1]

THE two official reports described in the footnote are not pleasant reading; it seems that the War Office is not the only culprit with regard to South African affairs, for the waste of life among the Transvaal miners from disease and accidents may fairly be described as appalling. But here, as in the case of the War Commission, the Briton is not afraid to wash his dirty linen in public, and for this he must be commended. The remedy for an ill will be discovered most speedily, if the symptoms are proclaimed widely and discussed freely.

The first document tells us that the death-rate among the natives employed at the mines on the Rand is 42 per 1000, which is extremely high. To see exactly what this figure means, we should compare it with the mortality rate of males of like age and occupation in this country; and no one can say that too favourable a case is taken if we choose, as a standard, the Cornish miner, who notoriously is a great sufferer from the ills which pertain to work below ground. Unfortunately, the official report does not state the mean age of the Rand miners, but it may be fairly assumed that the majority are young, and probably no great error would be made if their ages were taken as ranging from 25 to 35. In the years 1890–92 the mean annual death-rate of Cornish tin miners of 25 to 35 years of age was 8.06 per 1000, and for the men of 35 to 45 it rose to 14.32 per 1000. In brief, the death-rate of the natives employed at mines on the Rand is five times as much as that of the Cornish miners for the life-period 25 to 35, and nearly three times that of the men in the life-period 35 to 45.

The endeavour to cast some of the blame upon the natives themselves by saying that they fail to take ordinary common-sense precautions is ungenerous on the part of the author of the report. In matters of hygiene, the natives must be regarded as children and treated as such. The blame for the ill-health of the native must in the main lie at the door of the British employer. It is satisfactory, however, to learn that the present heavy death-rate on the Rand is regarded as exceptional.

The second document is a Blue-book containing the report of a Commission appointed by Lord Milner to inquire into the disease commonly known as miner's phthisis. Judging by the facts and figures brought forward, the inquiry has taken place none too soon. The Commissioners report "that the disease prevails to a very great extent, and that a high mortality is due to it." Carefully prepared medical evidence shows very plainly that the malady is silicosis pure and simple, a dust disease. The miner inhales sharp, angular particles of quartz, and these cause such irritation that the lung tissue undergoes a change and gradually becomes incapable of carrying on its respiratory functions. At the end of a few years, often only six or seven, so large a proportion of the lungs is rendered useless that the man dies. The age at death of many of the victims is only about 35 years. In the majority of cases there is no tubercular phthisis added to the silicosis. As might be expected, the men working rock drills are the greatest sufferers, and especially in places where the holes are bored upwards without any water.

The remedies suggested by the Commissioners are sprays and jets of water to prevent and keep down the dust, and some of the witnesses advocate the use of respirators, which are already being employed to a certain extent. The Commissioners are of opinion that experience is needed before deciding how water can be best applied.

Though dust is the worst evil affecting the miner on the Rand, it is not the only one. Analyses show undesirable proportions of carbonic oxide in what is called "normal mine air under ordinary working conditions." This noxious gas is generated mainly by the dynamite and other explosives, but also in some cases by heat acting upon the lubricant during the compression of the air used for working the drills. Mine-managers are often unaware of this latter source of danger. Mr. E. Hill, in a paper read before the American Institute of Mining Engineers, puts the matter very plainly by saying, "Workmen at the front, instead of receiving pure, cool air from the exhaust of the drills or other machines, breathe a foul, stupefying, and sometimes fatal, mixture."

The Transvaal Commissioners deserve much credit for the painstaking inquiry which they have made, and the lessons taught by it should be taken to heart by English mine-owners, for both Dr. Ogle and Dr. Tatham in their well-known reports have pointed out that the Cornish tin miner is a great sufferer from his dust-producing occupation.

[1] "Rand Mines (Native Mortality). Return of the Statistics of Mortality, Sickness and Desertion among the Natives employed in the Rand Mines during the Period October, 1902–March, 1903." Pp. 6 folio. (London, 1903.)
"Report of the Miners' Phthisis Commission, 1902–1903, with Minutes of Proceedings and Minutes of Evidence." Pp. 147 folio and 7 appendices. (Pretoria, 1903.)

PHOTOGRAPHY AT THE NEW GALLERY.

THE forty-eighth annual exhibition of the Royal Photographic Society is, in general arrangements, much like its predecessors, and shows very little evidence of this being the jubilee year of the Society. In the scientific and technical division the only difference that we notice is the reappearance of several exhibits that have been seen before, and the presence of a few isolated frames of examples from the Society's own collection. We understood that the Society's fine historical collection was to have been on view in its entirety, and feel much regret that advantage has not been taken of this opportunity for its display.

The fact that many of the exhibits are old and already well known gives especial value to the present