19h 26m. Strong pulsations over the whole heavens. Red in S.

During the radio signals mentioned by M. Jelstrup the following observations are noted :

20h 3m. The pulsations have ended. All over the heavens a diffuse light. In the pocket spectroscope the yellow-green auroral line could be seen everywhere, from the entire heavens, from the snow, and from everything which was illuminated by the diffuse aurora.

20h 9m. Some pulsating bundles of rays.

20h 12m. The pulsations stronger and rays begin to appear.

It seems to me probable that the sound which, as M. Jelstrup says, exactly followed the vibrations of the aurora, could not come directly from the latter but from the surroundings, trees, antennæ, and so on, and were caused by electrostatic discharges, which in their turn were caused by influence from the varying electrostatic charges of the aurora overhead.

CARL STORMER.

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Norway.

Clerk Maxwell and the Cavendish Laboratory.

OF all the notable contributions to the record of the Cavendish jubilee given in the issue of Dec. 18, perhaps the most interesting to many is the one by Sir Joseph Larmor on Clerk Maxwell ; for it suggests the way in which his equations, like those of the writer himself, contained the germs of many future developments, and incidentally directs attention to a Royal Society abstract which was unfortunately omitted from Maxwell's " Collected Papers." It was customary at that period for the Royal Society to publish not only the complete paper in the *Phil. Trans.*, but a thorough abstract also in the *Proceedings*—a practice which, perhaps unfortunately, has been departed from. The abstract referred to appeared in Dec. 1864, and gave in concise form the substance of one of the most remarkable memoirs of last century, " A Dynamical Theory of the Electromagnetic Field."

The abstract is exceptionally clear and luminous, and I should judge was written by Clerk Maxwell with some enthusiasm. It is, as Larmor says, full of ideas which have survived and developed since, though they have been supplemented and for a time apparently replaced by relativity and quantum considerations. It is possible, however, that posterity will see in Maxwell's ideas of more than half a century ago rather more than we perceive now ; just as we now see in Faraday's " Thoughts on Ray Vibrations " more than seemed likely at the time. In order to make that Maxwell abstract more readily accessible to the present generation, and on the Continent, I suggest that it might be reproduced in NATURE.[1]

I venture to think that mathematical physicists are often too satisfied with incorporating their ideas in a compact form, not in its fullness readily intelligible, and refrain from elaborating their full significance after anything like the same fashion as men of letters elaborate and discuss and attend in detail to the great utterances of the past. The novelty of Clerk Maxwell's views at that period is sufficiently demonstrated by the reception or non-reception of them by Lord Kelvin and by the great physicists of the Continent. They were never altogether overlooked in Great Britain, but not until they were clinched by Hertz did they make their way in Europe ; and the present generation is so occupied with its own rapid advances that a reminder of the ideas held by a pioneer long before most of them were born might be opportune and serviceable.

Incidentally, I would put on record a mention of what will doubtless elsewhere be referred to, namely, the remarkable gathering of physicists at Cambridge in celebration of Sir J. J. Thomson's seventieth birthday ; a gathering which, though partly of a domestic character, was a sign of the enthusiasm and prolific genius of our own times, and could not have been surpassed in any city or university of the world. Indeed, if an earthquake or other catastrophe had overwhelmed the room in which that meeting was held, on the evening of Dec. 18, the science of physics would have taken long to recover from an irretrievable loss. The world at large, and even the disciples of other branches of science, do not realise to the full the magnitude of the developments which are now going on, both in actual achievement and in luminous speculation. We live in a time of upheaval, for the ultimate result of which we may have to wait many years ; but there was in that gathering an element of hope, in the large group of younger workers, many present, others referred to, who show no sign of resting from their labours or being satisfied with the consolidation of past achievement, but are actively engaged in following up clues and in applying their well-prepared minds to future and perhaps still more fertile discoveries.

OLIVER LODGE.

Dec. 21.

[1] We hope to be able to find space to reprint the abstract in an early issue.—ED. NATURE.

The Mystery of Money.

I DO not think the writer of the very full review published in NATURE (Nov. 27) of my book, " Wealth, Virtual Wealth and Debt," really understands my new theory of money or the solution of the economic paradox, which he states, surely rather prematurely and prophetically, will be rejected by every student of economics. After all, I suppose every student of chemistry rejected the theory of atomic disintegration when it was first proposed a quarter of a century ago.

The reviewer quotes me to the effect that the aggregate of money, *irrespective of its quantity*, represents the aggregate value of the wealth which the community prefers to be owed rather than to own—which negative quantity of wealth I term the *Virtual Wealth* of the community—and then states that the argument is not lucid, even to the trained student, especially when he reads on a later page that the virtual wealth has in fact little to do with the quantity of money. He alleges I do not seem to realise that people retain money balances for their convenience, although on p. 205 I state, " It suits some of the people's convenience and affairs all of the time and all of the people's some of the time to be owed rather than to possess wealth so that they may be at liberty to select at their own time the sort and quantity they need . . . in exchange for their money." Similarly, with regard to my proposals to issue national money in lieu of bank credit, ending with: " In truth, Prof. Soddy's real plea is for the nationalisation of banking," the criticism is a travesty of what I do propose and the ' real plea ' about the last thing I would advocate.

As regards the new theory of money, it follows the ordinary quantity theory, familiar to every trained student, in regarding the value or purchasing power of the unit of money as being inversely proportional to the quantity in circulation, considered as a single independent variable. This is the same thing as saying, as I do, that the value of all of it is the same, whatever that all may be. I should have rather expected from the trained student and