

If Fresnel is right it ~~follows~~ must have an attraction for ponderable matter since it is more dense inside a solid body than outside it. I am aware that McCulagh regarded it as of equal density everywhere but I prefer Fresnel's hypothesis. I sent a paper on this subject to the editors of Hermathena before the publication of the first number but it never appeared. So the theory is no new one with me.

It has more than once occurred to me (but I don't know whether it is mathematically true) that the so-called aberration of light might arise from real de-

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13 Belvedere Place
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My dear Fitzgerald

I am much obliged for yours but was unable to accept your invitation to dine at Commons. My Metaphysical reasons are grounded on the relations between Space and Time enlarged on by Kant rather than the unconcealability of action in distance. I may be unable to formulate them at least so as to convince even a Kantian : but physically we know at all events 1 that many apparently instantaneous actions are really propagated in time - in fact except

gravitation I believe we are nearly in a position to affirm this of all of them, and 2nd There is a medium throughout all space capable of transmitting physical influences. To this it may now be added that there are marked though slight differences between the observed motions of some of the heavenly bodies and those computed on the assumption of the instantaneous action of gravity but of course I am not in a position to say whether these variations are explicable on the assumption of a transmission of gravity in time.

What book or paper of Clerk Maxwell's do you refer to? I should like to

see it. Of course he may be right but I rather think the ether is the electric fluid, electrical disturbances arising from a translatory motion as light and heat arise from vibratory motions in it. On the single-fluid theory the electric fluid must be self-repulsive but possessed of an attraction for ponderable matter and from the known extent of electric and magnetic phenomena I think we may now say extends throughout the Solar System at all and that it pervades nearly all space.

The ether must I apprehend be also self-repulsive (how indeed could it pervade all space if it was not? - but Lloyd seems to assume great self-repulsive energy as a part of the theory) and

volcanic stones from the moon &c
But it would be strange if none of
the Cometary shooting-stars that
encounter the atmosphere ever reached
the earth.

I remain

Very sincerely yours

J H S Monck

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vations of the earth from the elliptic
orbit caused by the transmission of
gravit in time. Since I got a telescope
however I have had more cause to re-
fret my want of sufficient mathe-
matical knowledge than before. Another
problem which often occurred to me is
that of Meteorites. My idea is that
a certain number of the Shooting Stars
are caught by the earth's attraction
and move round the earth rather
than the sun as focus after their
near approach to us and that then

new courses passing parts within
the limits of our atmosphere their
motion is retarded on every successive
journey and they ultimately drop to
the earth without any great shock
and without
~~It~~ attaining any remarkable tempera-
ture at the time. Of course to calculate
it mathematically the direction of the
motion and the distance of the shooting
Star should be known but with
some of them this is known approxi-
mately. As to those which are vaporised
by the heat developed by the resistance

of the atmosphere what becomes of them
afterwards? Vaporisation I take it would
in itself have no effect on their motion.
It would only increase the effect of the
atmospheric resistance but considering
their great velocity I should think that
a good many of them get clear of our
atmosphere and solidify again outside
it, but that they pursue a new course
with a considerably diminished velocity
^{Meteorites}
Ball seems to think that ~~they~~ are
stones shot from terrestrial volcanoes
ages ago and others describe them as