

to get back to work in a day or
two. I am going abroad in about
a month's time to the South of
France. -

Yours very sincerely
Cecilia Marie Caillard

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Nov^r 15th 184

19/74

Dear Professor Fitzgerald
I am enclosing a letter which
appeared about a month ago in the
Engineer on the Kinetic Theory of
Gases, which interested me very
much. I know too little to be
aware whether the suggestion
with regard to "a limit & that
by no means an extensive one,
to the possible variations of molecular
velocities above their mean value
at 0° C", has been made before, &
if so whether or how it was answered.
The difficulties raised by the writer

to the accepted view of matters,
seem to me to be real. — If it is
not troubling you too much, I
should exceedingly like to know
whether you so regard them, or
whether they arise from some
misconception. — In a letter to
Nature vol ~~xviii~~ p 102, on "The
Velocity of Propagation of Gravitation
Effects," Mr Tolver Preston says: "If
according to the accepted kinetic
theory of gases, the velocities of mole-
cules may vary between zero & infinity,
it must certainly result that ^{frequently} zero-
mores velocities are accidentally at-
tained by even gross molecules, &
the difficulties raised by the writer
in the Engineer, do not seem to
have occurred to him. — On the

contrary, later in the same letter,
he suggests that the existence of
such high velocities, "a state of
motion of a very high intensity
in the matter of space would be
consistent with, or would be de-
manded in order to give some
rational account of sudden discon-
tinuities or transferences of motion."
But by "matter in space", he
means apparently either the ether
or "finer & therefore more mobile
material" — & therefore the same
difficulties would not exist as in
the case of gross molecules. —

I hope Mrs Fitzgerald has
now regained her strength & that
your little son is well. — I have
just been ill myself, but hope

19/74