[1r] My dear Lady Lovelace

I have of course but little to say
on your report of progress up to the 21st.
With regard to your music, if you have any
wish to begin the study of acoustics, you may find
an elementary compendium of the most material
points directly connected with music, in the following
articles of the Penny Cyclopaedia

Acoustics, Cord, Harmonics, Pipe

The last will appear at the end of this month
and contains a correction to be made in each
of the first and second. I should recommend to you, out of the same
Cyclop^a the articles

Infinite; Nothing; Limit; Negative and Impossible
Quantities;
Fractions, Vanishing;

[1v] With regard to the only point to which you
have alluded your finding that 'I do not insist
in zero being something' the matter is as follows.
Zero is something though not some quantity, which
is what you here mean by thing.
Some writers on the differential calculus use
not 0, but $\frac{0}{0}$, in an absolute sense, as standing
for a quantity. The difference between them and
others consists mostly in phraseology. One person
will say that $\frac{a^2-a^2}{a-a}$ is $2a$; a second will say that
the appearance of $\frac{a^2-a^2}{a-a}$ denotes a misapprehension to have
taken place during the process, which being avoided in a
repetition of the process, $2a$ comes out rationally as the
answer. If the first be pressed to prove his assertion,
he will tell you that the two words underlined are
the abbreviation of all that is afterwards underlined.
You will see more of this abbreviation in the article
Infinite to which I have referred. Absolute modes
of speaking, which are false, are conventionally
used in abbreviation of circumlocutions.
I forwarded to Lord Lovelace the other day a prospectus
of a Society now in process of formation for
[2r] printing scientific manuscripts which have not
been hitherto printed. The works of this society
are not to be published, but only distributed

among the members. As you will certainly take
an interest in the results of its labors, if you
continue your studies, I should recommend
your being a member, with Lord Lovelace as
your proxy.
There is another Society also forming, of the same
kind, and on the same terms, the Percy Society
for the publication of ancient inedited
songs and ballads.

        I remain
           Faithfully yours
               ADeMorgan

3 Grotes' Place
   Blackheath
Thursd^y m^g

   My wife desires kind remembrances.