[37r] My dear Lady Lovelace

If you look back to
page 48, you will there
see that
$\frac{a+a'+a''+\cdots}{b+b'+b''+\cdots}$ always lies between
the greatest & least of $\frac{a}{b}$[,] $\frac{a'}{b'}$ &c
whatever the signs of a[,] a' &c
may be, provided that b, b'
&c are all of one sign. That
is the reason why φx need not
continually increase or decrease
in the next chapter

The paper you have sent me
is correct. In page 70, the
reasons are given for
[37v] avoiding the common proof
of Taylor's Theorem, and 71 &c
contains the amended proof.

Of $\frac{\varphi(a+h)}{\psi(a+h)} = \frac{\varphi'(a+\theta h)}{\psi'(a+\theta h}$ [bracket missing in last denominator] it
cannot only be said that
it turns out useful. A
beginner can hardly see
why a diff^{l} coeff^{t} itself
should be of any use

Yours truly

ADeMorgan

Feb^{y} 6/41