

Note on Mr. Stone's Theory of the Measure of Time.

By Professor Simon Newcomb.

The discussion with Mr. Stone has now reached a stage where nothing remains to be done on my part except to invite Mr. Stone's attention to the conclusions from his theory, as he states them in the May number of the *Monthly Notices*.

A copy of Le Verrier's *Tables du Soleil* has been in my possession since the year 1859. If, with the tables in this book, I compute the sidereal time of mean moon on 1892, January 6, and thence the tabular right ascension of the Moon from Hansen's tables at the moment of its transit over the meridian of Oxford, on that date, I find a difference between the tabular and observed right ascension of $1^{\circ}36'$. The result will be substantially the same if I use the older tables of Carlini.

Mr. Stone maintains that this result is due to my failure to apply a certain correction to the numbers of Le Verrier's tables, which correction is not a function of anything contained in the tables, or of the epoch of any natural event, but of the date when a certain office, three thousand miles away, began to use the tables in computing the solar ephemeris. In his last note on the subject he gives precision to this conclusion by stating explicitly that if the office in question had not begun the use of the tables until 1892, the result would have been $0^{\circ}10'$, instead of $1^{\circ}36'$. The statement is still further strengthened by his answer to my second question, that $0^{\circ}10'$ would also have been the result if Carlini's tables had been continued to the present time in the *Nautical Almanac Office*, though, if I make the computation with Carlini's tables now, I shall get nearly $1^{\circ}36'$, the same as with Le Verrier's tables. It thus seems, according to Mr. Stone's theory, that the results which I now get from tables are different from what they would have been had a change of tables not been made in the *Nautical Almanac Office*.