

would make the corrected result 3.214 ± 0.072 miles or 5171 ± 116 metres per second.

STOPPED CLOCKS.

It is natural to suppose that if a clock were stopped by an earthquake and if its error at the time were known it would give the best possible record of the time of advent of the shock. An examination of the time reports of this earthquake, however, strongly contradicts this conclusion. A clock may stop at almost any phase of the disturbance. A sensitive one may pass through an earthquake of considerable violence and not stop at all. A jeweler's clock in Charleston was found going the next morning, and when the telegraph wires were re-opened its error was found to be small, showing that its escapement had missed very few beats, if any. Clocks in Columbia, Savannah, Augusta and Wilmington, N. C., in many cases kept going. Inquiry at Wilmington elicited the reply that no jeweler's clocks had been stopped. Several reports describe clocks whose rates are satisfactorily vouched for but whose times can be accounted for only upon the theory that they were stopped by the second powerful shock, which was felt at Charleston about five minutes after the principal one, *e. g.*, Branchville, S. C., Augusta, Rome, Ga., Cape Canaveral, Camden, Ala., Memphis, Tenn. There are some cities where the time of beginning is well established by independent observation and which also report stopped clocks. In every such case the time of the stopped clock is much later. Thus at Nashville the time of beginning was noted by a clock which continued going for 42 seconds and then stopped. Similar means of comparison come from Cincinnati, Covington, Ky., Pittsburg, Newark, N. J., Brooklyn and New York. And in general wherever stopped clocks can be compared with really good personal observations they invariably show a later time and usually a much later one. The difference is plainly due to the fact that it generally takes a considerable time and an accumulation of the effects of the vibrations of the building upon the pendulum to stop a clock. An attempt has been made to evaluate this difference by taking those cases where a comparison can be made between the readings of stopped clocks and independent determinations of the times of the beginning in the same locality.

Locality.	State.	Intervals by personal obs. Seconds.	Intervals by stopped clocks. Seconds.	Ratios.	Weights.
Nashville,	Tenn.	144	186	1.29	2
Covington,	Ky.	155	235	1.52	1
Cincinnati,	O.	155	195	1.26	2
Pittsburg,	Pa.	174	234	1.34	1
Brooklyn,	N. Y.	204	234	1.15	1
New York,	N. Y.	204	240	1.22	2
Mean ratio,				1.28	