

The mean time of transmission of the electric signals along this 1,616 miles was $x=462s.$, which is equivalent to a speed of only 3,498 miles per second; but the above time of transmission includes the charge and discharge of the condensers at each end of the cable, and also the retardation of the cable itself.

Before I finish this report I wish to place on record the hearty manner in which all the telegraphic arrangements were carried out by the officers who took part in the work, both in New South Wales and New Zealand. The Eastern Extension Telegraph Company with great liberality gave the free use of their cable connecting New Zealand with Sydney.

The telegraphic arrangements at the Sydney end of the cable were under the personal supervision of Mr. J. S. Shapley, the Superintendent of the Cable Company, while Dr. Lemon, General Manager of the New Zealand Telegraphs, and the various officers of his department, cordially co-operated in this colony. The electrical instruments in Mount Cook Observatory were placed in charge of Mr. John Gell (of the New Zealand Telegraph Department), whose willing assistance contributed materially to the success of our operations.

In conclusion, I wish to express my acknowledgments to Mr. Arthur Beverly, of Dunedin, who has kindly given the benefit of his valuable services. He has taken a lively interest in the work from its commencement, and I am indebted to him for many useful suggestions. Table 5, giving errors and rates by curves, is due to him alone, besides which he has kindly revised the whole of the reductions. I therefore consider that the final result will carry greater weight by having the stamp of his approval.

I have, &c.,

C. W. ADAMS,
Geodesical Surveyor.

J. McKerrow, Esq., Surveyor-General.
