

“The Relation between Rate and Arc for a Free Pendulum”; “On Airy’s Disturbance Integrals and Knife-edge Supports for Pendulums”; “The Dissipation of Energy by a Pendulum swinging in Air”; “The Amplitude Deviation of Rate of a Pendulum: a Second Experiment.”

He himself designed and constructed several clocks of which at least one, a seconds pendulum, has shown remarkably accurate time-keeping qualities. Throughout this period of his life his interest in clocks and time-keeping was insatiable, and he kept in close contact not only with the observatories at Greenwich, Paris, Hamburg and in the U.S.A., but also with many other amateur enthusiasts, of whom the Society has been proud to number many among its Fellows. In particular it was Atkinson who played a major part in arranging for the late C. O. Bartrum’s pendulum being accepted by the Science Museum and erected there.

Throughout his life Atkinson was distinguished by his enthusiastic attitude to whatever branch of science, sport or work that he took up. His record of service in many capacities to rowing, rugby, the Boy Scouts and Boys’ Clubs is one of which anyone would be proud. An indication of his undying spirit is given by his immediate offer, on the outbreak of war, to serve in whatever capacity his precise knowledge and experience (he served as musketry instructor during the war of 1914–18) could be utilised. He was not called upon, but he immediately joined the Home Guard on its formation.

He died on 1940 December 3 after a short illness; he never married.

Atkinson was elected a Fellow of the Society on 1904 December 9.

EDWIN TURNER COTTINGHAM was born at Ringstead, near Thrapston, Northants, on 1869 April 9. Leaving school at an early age, he was apprenticed to a tailor in the village; but whilst still in his teens he left the tailor and started to work for a clockmaker Mr. Allen in Thrapston. In this congenial work he made rapid strides, and on Mr. Allen’s retirement took over the business. The first clock which he made was the Thrapston church clock, including the whole chiming mechanism. It was his favourite “child,” and his last exertion, though ill at the time, was to put it forward for Summer Time in 1940.

In the period between the Riefler clocks and the Shortt clocks Cottingham took a prominent part in the progress of astronomical time-keeping in England. His work was appreciated and encouraged by Dyson and Sampson; and a Cottingham clock had a leading part in the latter’s research on “The Measurement of Time to a Thousandth of a Second” (*M.N.*, 78, 592, 1918). In the last war he repaired and timed many Admiralty chronometers, and adapted a Graham regulator from Greenwich for dropping the Time Ball at Rosyth. Shortly afterwards he began manufacturing Riefler escape-ment clocks in airtight cases. Of these he made two himself, the first going to Greenwich and the other to the Royal Alfred Observatory at Mauritius. It was after this, when another clock was required for Hong Kong Observatory, that he went into partnership with Messrs. T. Mercer & Sons of St. Albans. Three clocks were manufactured, one going to Hong Kong, one being kept by Mr. Mercer, and one by himself. The one which he kept is being offered to the Science Museum at South Kensington.

Cottingham was one of the four observers who took part in the eclipse expeditions of 1919 May 29, at which the Einstein deflection of light was first confirmed. He and the writer went to the Isle of Principe in the Gulf of Guinea. This expedition, although less fortunate in the weather than the other expedition, had some success; and two photographs, obtained through thin cloud, gave the deflection value $1''.61 \pm 0''.30$.

To Cambridge Observatory he was a good friend and benefactor. For more than thirty years he was, in fact if not in name, an honorary keeper of the clocks, visiting them regularly and freely undertaking their cleaning, repair and adaptation to varying needs.