

Ludwig Boltzmann: The Man Who Trusted Atoms, by Carlo Cercignani, Oxford University Press, Oxford, 2006, pp. xvii + 329. First published in 1998, re-issued in paperback. Scope: scientific biography. Level: undergraduate, postgraduate, and general reader.

Ludwig Boltzmann was one of the towering figures who marked the transition from nineteenth to twentieth century science. It is not generally realised that in his era the very existence of atoms still remained controversial. Boltzmann was convinced of their reality at an early stage, but was surrounded by distinguished sceptics such as Mach and Ostwald who seemingly regarded atomism as no more than an amusing fairy-story. So he had to fight hard for his ideas. Of course, he was right. Not only was he (at least as much as Gibbs) the father of statistical mechanics, but his ideas exerted strong influence on his contemporaries and successors, including Hilbert, Planck and Einstein. Boltzmann's life was tortured by the mood-swings associated with manic depression, and a restlessness of spirit. Even when already famous, he needlessly changed universities on several occasions, often to a less congenial environment than the one he was leaving. Carlo Cercignani's lovingly crafted book describes all this and works well, on many levels. It is both a personal and a scientific biography. Much interesting technical material (including almost all the equations) is consigned to appendices, so the main text can be read by anybody. Readers will gain a sympathetic understanding of this sensitive, cultured, and anguished man as well of his enormous contributions to science. Although the author is properly reticent about the reasons for Boltzmann's suicide while on holiday in Duino near Trieste in 1906 – he left no suicide note and nobody knows the specific reason for the act – it becomes clear that his tragic end was in a sense almost inevitable. The author quotes Höflechner's words, that Boltzmann "...switched universities for the last time and entered the one great university of the immortal intellectual giants of science".

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