Luis E. Ramos Guadalupe, translated by Oswaldo García

Father Benito Viñes, the 19th-Century Life and Contributions of a Cuban Hurricane Observer and Scientist. Boston: American Meteorological Society, 2014. Pp. 172. Pb, \$20.

This book, an English translation of the original Spanish edition—entitled *Benito Viñes, s. j. Estudio biográfico* (Havana: Academia, 1996)—examines the life and work of the Jesuit meteorologist Benito Viñes (1837–1893), a pioneer of the study and forecasting of tropical hurricanes, working out of the Belen Observatory in Havana. The translator and publishers deserve praise for rendering the life and work of this unjustly neglected figure in the history of meteorology accessible to a wider audience. The foreword (by Richard A. Anthes) and the translator's note explain the many alterations incorporated in the English edition, to which the author also contributed. The book is divided into four chapters: 1. Viñes's arrival in Cuba; 2. his childhood, youth, and vocation; 3. his works and the evolution of his scientific thought; 4. his adult life in Cuba.

Viñes arrived to Cuba in 1870, where he was appointed director of the observatory established in 1857 at the Real Colegio de Belén, a Jesuit college in Havana. He soon dedicated his efforts entirely to the observation and study of tropical hurricanes, making his first accurate forecast in 1875. In the first chapter, Ramos presents a lively account of these first years of Viñes's work, his election as member of the Cuban Royal Academy of Sciences, and his first announced forecast of a hurricane in the Caribbean. Numerous primary sources demonstrate how he had established a solid reputation as a scientist in only a few short years. Details are given of the 1875 forecast, and Viñes's subsequent survey of the damage to the region. The following year, the captain of the American steamship *Liberty* chose to ignore Viñes's well-publicized forecast of another hurricane and left the harbor of Havana (closed at Viñes's suggestions); the ship sank soon after, cementing Viñes's reputation as a meteorologist.

The second chapter concerns Viñes's childhood in Poboleda, Spain, his studies in the diocesan seminary of Tarragona, and his entrance into the Society of Jesus in 1856. The content of this section derives from the biography of Viñes by the Jesuit Antonio López de Santana (*R.P. Benito Viñes Martorell, s.i., célebre meteorólogo de las Antillas* [Santander: Bedia, 1958]), not used in the Spanish edition. Ramos incorrectly asserts that Viñes received his scientific training at the University of Salamanca, where he attained the rank of full professor [*catedrático*]. According to López de Santana, Viñes went to Salamanca in 1861, after completing his training in philosophy at the Jesuit college at Leon. He taught science in the diocesan seminary at Salamanca, as well as study-

ing theology from 1865 to 1868. Nothing is said about his studies at the university—let alone his being a professor there—something then normally impossible for a Jesuit.

Chapter three presents a summary of Viñes's scientific endeavors; in addition to his work on Caribbean hurricanes, this included the development of two instruments for hurricane path detection, other meteorological observations, terrestrial magnetic observations, a field survey of the damage produced by two earthquakes in 1880, observations of the transit of Venus across the solar disk in 1882, and the observation of a large fireball in 1886. Ramos dedicates particular attention to Viñes's two primary publications on the circulation and movement of hurricanes in the Antilles: *Apuntes relativos a los huracanes de las Antillas* (1877) and *Investigaciones relativas a la circulación y translación de los Huracanes de las Antilla* (1895). The latter was completed only two months before Viñes's death and published posthumously. In these two books, Viñes presented his so-called laws of the circulation and movement of hurricanes, eventually partially translated into English, French, and German.

The last chapter adds several other important considerations about Viñes's work, such as his 1877 project to establish a network of meteorological stations in the Caribbean region, which after ten years had only partly materialized. Ramos presents an interesting account of Viñes's relations with the press (often negative), with the American Weather Bureau (always positive), and with the colonial government, as well as his close friendship with the renowned Cuban physician Carlos Finlay (1833–1915). Though born in Spain, Viñes considered himself a Cuban scientist, with a very high esteem for his adopted country. Finally, Ramos gives special attention to the failed forecast of 1888. The epilogue fails to mention the 1961 closure of the Belen Observatory by Fidel Castro, the confiscation of the school, and the expulsion of the last director, Fr. Rafael Goberna (1903–1985).

In conclusion, we must thank the American Meteorological Society for bringing the figure of Fr. Viñes to the attention of a wider audience, given the limited circulation of Ramos's original Spanish edition. The translator, Oswaldo García, has done a wonderful job in adding notes and improving the text. Viñes deserves to be better known as an important pioneer in the observation, study, and forecasting of tropical hurricanes. There are, however, some minor quibbles: the Society of Jesus was founded in 1540, not 1542, while the Jesuits established themselves in Havana in 1568 (after their failed mission to Florida), not in 1566 (68). It is also very doubtful that Viñes had read any texts on hurricanes before being appointed to Havana (31). The connection of Viñes's work to other Jesuits' meteorological endeavors could have profited from my own work: "Jesuits' contribution to Meteorology" (*Bull. Am. Meteor. Soc.* 77 (1996),

2307–15) and *Searching the Heavens and the Earth: The History of Jesuit Observatories* (Kluwer, 2003).

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