
**IN DARWIN'S SHADOW:
*The Life and Science of
Alfred Russel Wallace.***

By Michael Shermer. Oxford Univ. Press.
422 pp. \$35

Casual students of biology know that in 1858 Charles Darwin received a letter from a naturalist named Alfred Russel Wallace which described independently some of the general ideas of evolution and natural selection that Darwin was about to make famous. And that's about *all* that most students know. History has placed Wallace (1823–1913) in the role of evolution's second banana. Shermer's thorough and intelligent account makes Wallace's originality clear, while leaving no doubt that history has, on the whole, judged him rightly.

Darwin had family money to support his famous voyage on the *Beagle* and his subsequent thinking and writing. Wallace, born poor, lived hand to mouth most of his life, financing long travels in South America and the Malay Archipelago by collecting novel specimens to sell in London. Later he made a precarious living by writing, but his interests were always more intellectual than commercial. In the Far East he was struck by the way butterflies and other creatures showed a vast range of tiny variations across the islands. While laid up with malaria, he recollected Malthus and saw how the struggle for existence, acting on the endless variations he had observed, would lead to natural selection. In modern terms, the survival of the fittest drives the evolution of species. This is what Wallace wrote about to Darwin.

Shermer's level-headed analysis gives Wallace due credit even as it persuasively debunks conspiracy theories holding that Darwin connived with the London scientific establishment to usurp the younger man's place in history. In fact, Darwin helped publicize Wallace's work, and was impelled by it to hurry up and finish his *Origin of Species* (1859), on which he had been working for many years. Darwin acknowledged Wallace's independent thought, and Wallace acknowledged Darwin's priority. They remained on friendly terms.

Back in England, Wallace never became part of the inner circle of British scientists. He came to think that natural selection could not account for human intelligence, and he got caught up in the late-Victorian craze for

phrenology and spiritualism, which diminished his scientific reputation.

At this point in his account of Wallace's life, Shermer, the author of *Why People Believe Weird Things* (1997), embarks on a rather different book. Eager to make his history scientific, he offers statistical analyses of Wallace's writings, along with psychological assessments, on a numerical five-factor scale, of his subject's personality. He concludes, in brief, that Wallace was a natural heretic—a bit of a sucker for radical ideas and hopeless causes, with an innocence that verged on gullibility.

Shermer spends far too much of the book trying to justify, with limited success, his quantitative methods. He seems to believe that once he has found a way of attaching a number to something, he has hit on objective truth, and that whatever cannot be measured numerically is of meager value. Nevertheless, his emphasis on understanding Wallace's science and beliefs through his individual psychology stands in welcome contrast to the approach taken by most academic historians of science, who aim to reduce original thinkers to anonymous blobs of gray matter responding to sociological forces that only the historians have the wit to perceive.

Shermer is an enthusiastic if raggedy writer, and his book, idiosyncrasies included, gives a compelling and fair assessment of a man too often overlooked.

—DAVID LINDLEY

**MATHEMATICS ELSEWHERE:
*An Exploration of Ideas Across Cultures.***

By Marcia Ascher. Princeton Univ. Press.
207 pp. \$24.95

I'm probably not the only one who's going to throw an "End of the World" party on December 21, 2012, the day that the 5,125-year cycle of the Mayan "long count" calendar ends. The Maya themselves never thought that the end of the long count would mark the end of the world, but some modern New Agers fear the apocalypse when the last hour of the last day on the Mayan calendar ticks away.

Whereas the Western calendar (like most other modern calendars) is linear—the numbered years get greater and greater without end—the Mayan calendar is cyclical, resetting every 5,125 years. The Maya perceived some-