

Darwin's First Theory:

Exploring Charles Darwin's Quest to Find a Theory of the Earth

Talk by Rob Wesson

At

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Everybody knows—or thinks they know—Charles Darwin, the father of evolution and the man who altered the way we view our place in the world. But what most people do not know is that Darwin was on board the HMS *Beagle* as a geologist—on a mission to examine the land, not flora and fauna. Or about Darwin's seminal role in demonstrating and exploring the ups and downs of the Earth's crust, focusing on what we now call tectonics. This is the story told in Rob Wesson's book, *Darwin's First Theory*, and that he will share with us.

Retracing Darwin's footsteps in South America and beyond, Rob trekked across the Andes, cruised waters charted by the *Beagle*, hunted for fossils in Uruguay and Argentina, and explored sites of long vanished glaciers in Scotland and Wales. As he followed Darwin's path—literally and intellectually—he experienced the land as Darwin did, engaged with his observations, and tackled the same questions Darwin had about our ever-changing Earth.

Upon his return from his five-year journey aboard the *Beagle*, after examining the effects of earthquakes, tsunamis, volcanic eruptions, and more, Darwin conceived his theory of subsidence and uplift—his first theory. These concepts and attitudes—the vastness of time; the enormous cumulative impact of almost imperceptibly slow change; change as a constant feature of the environment—underlie Darwin's subsequent discoveries in evolution. And this peculiar way of thinking remains vitally important today as we enter the human-dominated Anthropocene age.

The New York Times Book Review wrote that Rob's book “dares, thank goodness, to work some of the rare Darwinian territory that is actually underexplored.” *Nature* described it as “a wonderful evocation of Darwin's great theory of subsidence and uplift, the substrate of his later, explosive discovery of evolution.”

About Rob

Rob Wesson is an earth scientist who also loves stories. Growing up in the Pacific Northwest, he became fascinated by mountains and glaciers. This interest led to a BS in earth science from MIT, and an MS and PhD in geophysics from Stanford University. His career in earthquake research with the U.S. Geological Survey (USGS) spans four decades, where he is currently a Scientist Emeritus. He has also written about science for a popular audience for the USGS and for *Scientific American*. In retirement, his research has turned to Chile where he is collaborating with a team exploring large earthquakes, tsunamis, and associated tectonic questions. This work has been supported in part by grants from the National Science Foundation. When not traveling to South America or elsewhere, Rob divides his time between his home in Evergreen, Colorado, and the cabin he built near McCarthy, Alaska.

Rob first became interested in Darwin and his geology through reading *The Voyage of the Beagle* on a vacation trip to Patagonia. He became captivated by Darwin's prodigious powers of observation and his insatiable need to understand and explain. Whatever rock, fossil, landscape, rodent, bird, or beetle that he found, Darwin wanted to tell its story.