



WALLACE'S LINE THEN AND NOW

Professor Gareth Nelson, University of Melbourne, Australia

On July 1, 1858 papers read to the Linnean Society of London on behalf of Charles Robert Darwin and Alfred Russel Wallace announced the theory of evolution by means of natural selection. Through his long life Wallace was an active public defender of this theory. Late in life he reverted to an older philosophy, by adding an element of final cause through Intelligent Design. While collecting natural history specimens in the Malay Archipelago (1854-1862), Wallace discovered a faunal boundary, later termed Wallace's Line by TH Huxley. Today, Wallace's Line is seen as the result of Plate tectonics (continental drift). Its interpretation breaks with that of the past, in dimensions unforeseen by Wallace and the science of biogeography that he helped found and inspire.

Gareth Nelson is Professorial Associate, School of Botany, University of Melbourne, and Curator Emeritus, American Museum of Natural History, New York, where he was employed 1967-1998 in the Department of Ichthyology. His research on fishes, their systematics, and their biogeography, was recognized by the Gibbs Award (1992), American Society of Ichthyologists and Herpetologists, and the Linnean Medal (2001), Linnean Society of London. Born in 1937 in Chicago, Illinois, Nelson attended the Universities of Chicago, New Mexico, and Paris in the 1950s, with degrees from Roosevelt University (BS, 1962) and the University of Hawaii (PhD, 1966).



DARWIN, ADAPTATION, AND THE ORIGIN OF SPECIES

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Charles Darwin and Alfred Russel Wallace introduced the radical idea that evolutionary change within a lineage is largely driven by natural selection. Darwin, in the *Origin of Species*, further argued that natural selection causes the splitting of species. The latter idea proved controversial and it has often been noted that Darwin's book solved virtually every problem in evolutionary biology except the origin of species. Recent research on molecular evolution and speciation, however, has vindicated both the Darwin-Wallace view that natural selection drives much evolution and the corollary view that natural selection often drives the splitting of species. Professor Orr will briefly review these findings from molecular evolution and speciation.

H. Allen Orr is University Professor and Shirley Cox Kearns Chair of Biology at the University of Rochester. He is an evolutionary biologist and the author of *Speciation* (with J. A. Coyne). Professor Orr has been the recipient of a Guggenheim Fellowship, a David and Lucile Packard Fellowship in Science and Engineering, and an Alfred P. Sloan Foundation Postdoctoral Fellowship; he was also awarded the Dobzhansky Prize and the Young Investigator Prize and will receive a 2008 Darwin-Wallace medal in 2009. He is a frequent contributor of book reviews and essays to the *New Yorker* and *The New York Review of Books*.