STEVEN M. STANLEY

Date of Birth: November 2, 1941

Education:

Princeton University, A.B. (1963) *summa cum laude*
Yale University, Ph.D. (1968)

Positions Held:

University of Hawaii
Research Professor of Geobiology, (2005 -)
Johns Hopkins University
Assistant Professor (1969-71), Associate Professor (1971-74), Professor (1974-90, 1991- 2005)
Chair, Department of Earth and Planetary Sciences (1987-88)
Founder and Chair, Environmental Earth Sciences and Policy Master's Program (1993-2005)
Smithsonian Institution
Associate in Research (1972-)
Case Western Reserve University
Professor (1990-91), Chair, Department of Geological Sciences (1990-91)
University of Rochester
Assistant Professor (1967-69)

Professional Memberships:

The Paleontological Society (Fellow)
Society for the Study of Evolution
Geological Society of America (Fellow)
Society for Sedimentary Geology (SEPM)
American Geophysical Union
National Academy of Sciences

Professional Activities:

Paleontological Society, Councilor Under Age 40 (1976-77); Councilor (1991-93) President (1993-94); Chair, Geobiology of Critical Intervals Committee (1995-1997)
Geological Society of America, Committee on Research Grants (member 1976-78; Chair,1978), Penrose Medal Committee (1986-88;1996-1998; Chair,1998), Public Service Award Committee (2004-05); Councilor (2002-2005)
Society for the Study of Evolution, Councilor (1982-84)
National Science Foundation, Advisory Committee for Earth Sciences (1990-1993)
U.S. National Committee for INQUA (1983-87
National Research Council, Board on Earth Sciences Member (1985-88); Vice chair (1987-88), Board on Earth Sciences & Resources (1988-90), Commission on Geosciences, Environment & Resources (1990-1996)

American Geological Institute, Executive Committee (1997-2001); President (2002)
American Geophysical Union, Committee on Public Affairs (2002-04)

Editorial Boards:

American Journal of Science, (1975-)
Paleobiology (1975-82, 1988-90)
Proceedings of the National Academy of Sciences (1999-2001),
Geobiology (2003-2006)

Honors and Awards:

Outstanding Paper Award, Journal of Paleontology (1972)
Allan C. Davis Medal of the Maryland Academy of Sciences for Maryland's outstanding young scientist of 1973
Schuchert Award of the Paleontological Society for distinguished research and/or teaching before the age of 40 (1977)
Guggenheim Fellowship (1980-81)
American Book Award Nomination, 1981, *The New Evolutionary Timetable*
Outstanding Technical Paper Award for 1986, Geological Society of Washington
Election to American Academy of Arts and Sciences (1988)
Election to National Academy of Sciences (1994)
J. A. Bownocker Medal, Ohio State U., for contributions to the geological sciences (1998)
James H. Shea Award, National Assoc. of Geoscience Teachers, for books authored (2004)
Mary Clark Thompson Medal, National Academy of Sciences, for contributions to geology and paleontology (2006).
Paleontological Society Medal, for advancement of knowledge in paleontology (2007)
Twenhofel Medal, Society for Sedimentary Geology (SEPM), the highest award of the society, for outstanding contributions to sedimentary geology (2008)
Penrose Medal, Geological Society of America, the highest award of the society, in recognition of eminent research in pure geology (2013)
Albert Nelson Marquis Lifetime Achievement Award (2018)

Principal Publications:

Stanley, S. M. 1966, Paleoecology and diagenesis of Key Largo limestone, Florida: Bull. Amer. Assoc. Petrol. Geol. 50:1927-1947.

Stanley, S. M. 1968, Post-Paleozoic adaptive radiation of infaunal bivalve molluscs – a consequence of mantle fusion and siphon formation: J. Paleontology 42:214-229.

Stanley, S. M. 1969, Bivalve mollusk burrowing aided by discordant shell ornamentation: Science 166:634 - 635.

Stanley, S. M. 1970, Relation of shell form to life habits in the Bivalvia (Mollusca): Geol. Soc. Amer. Memoir 125, 296 p.

Raup, D. M. and Stanley, S. M. 1971, Principles of Paleontology: San Francisco, W.H. Freeman and Co., 388 p.

Stanley, S. M. 1971, The early evolution of byssal attachment in the Bivalvia (Mollusca). Geol. Soc. Amer. Abstr. with Progr. 3:717.

Stanley, S. M. 1972, Functional morphology and evolution of byssally attached bivalve mollusks: J. Paleontology 46:165-212.

Stanley, S. M. 1973, An explanation for Cope's Rule: Evolution, 27:1-26.

Stanley, S. M. 1973, An ecological theory for the sudden origin of multicellular life in the Late Precambrian: Proc. Nat. Acad. Sci. 70:1486-1489.

Stanley, S. M. 1973, Effects of competition on rates of evolution, with special reference to bivalve mollusks and mammals: System. Zool. 22:486-506.

Stanley, S. M. 1973, The Late Precambrian evolutionary explosion: New evidence and a new theory: Geol.Soc. Amer. Abstr. with Progr. 5:818.

Stanley, S. M. 1974, Relative growth of the titanothere horn: A new approach to an old problem: Evolution 28:447-457.

Stanley, S. M. 1974, What has happened to the articulate brachiopods? Geol. Soc. Amer. Abstr. with Progr. 6:966-967.

Stanley, S. M. 1975, Why clams have the shape they have: An experimental analysis of burrowing: Paleobiology 1:48-58.

Stanley, S. M. 1975, Adaptive themes in the evolution of the Bivalvia (Mollusca): Ann. Rev. Earth and Planetary Sci. 3:361-385.

Stanley, S. M. 1975, A theory of evolution above the species level: Proc. Nat. Acad. Sci. 72:646-650.

Stanley, S. M. 1975, Clades versus clones in evolution: Why we have sex: Science 190:382-383.

Stanley, S. M. 1976, Fossil data and the Precambrian-Cambrian evolutionary transition: Amer. Jour. Sci., v. 276, p. 56-76. Reply to K.M. Towe: Ibid 266:1180-1181.

Stanley, S. M. 1976, Stability of species in geologic time: Science 192:267-269.

Stanley, S. M. 1976, Ideas on the timing of metazoan diversification: Paleobiology 2:209-219.

Stanley, S. M. 1977, Coadaptation in the Trigoniidae, a remarkable family of burrowing bivalves: Palaeontology 20:869-899.

Stanley, S. M. 1977, Influence of rates of speciation and extinction on the diversity and evolutionary stability of higher taxa. Jour. of Paleont. 51:26-27. (Suppl. to No. 2.)

Stanley, S. M. 1977, Trends, rates, and patterns of evolution in the Bivalvia. pp. 209-250 in A. Hallam, ed. Patterns of Evolution (Elsevier, Amsterdam).

Stanley, S. M. 1978, Chronospecies' longevities, the origin of genera, and the punctuational model of evolution: Paleobiology 4:26-40.

Raup, D. M. and Stanley, S. M. 1978, Principles of Paleontology (2nd ed.): San Francisco, W.H. Freeman and Co., 481 pp.

Stanley, S. M. 1978, Aspects of the adaptive morphology and evolution of the Trigoniidae: Phil. Trans. Roy. Soc. London (B) 284:247-258.

Stanley, S. M. 1979, Macroevolution: Pattern and Process: San Francisco, W.H. Freeman & Co., 332 pp.

Stanley, S. M. 1979, Opercula and predators: The evolutionary significance of gastropod torsion. Geol. Soc. Amer. Abstr. with Progr. 11:523.

Stanley, S. M., Addicott W.O., and Chinzei, K. 1980, Lyellian curves in paleontology: possibilities and limitations. Geology 8:422-426.

Stanley, S. M. and Newman, W.A. 1980, Competitive exclusion in evolutionary time: the case of the acorn barnacles (Crustacea:Cirripedia). Paleobiology 6:173-183.

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Stanley, S. M., Signor, P.W., Lidgard, S., and Karr, K.F. 1981, Natural clades differ from "random" clades: simulations and analyses. Paleobiology 7:115-127.

Stanley, S. M. 1981, Patterns of extinction within the Bivalvia. Geol. Soc. Amer. Abstr. with Progr. 13:559.

Stanley, S. M. and Campbell, L. D. 1981, Neogene mass extinction of Western Atlantic molluscs. Nature 293:457-459.

Stanley, S. M. 1981, The New Evolutionary Timetable: Fossils, Genes, and the Origin of Species: New Yrok, Basic Books, 222 pp.

Stanley, S. M. 1982, Macroevolution and the fossil record. Evolution 36:460-473.

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Stanley, S. M. and Eldredge, N. 1984, Living Fossils (Springer-Verlag, New York).

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Stanley, S. M. 1992, Can neurons explain the Cambrian explosion? Geol. Soc. Amer. Abstr. with Progr.,
24: A45.

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Stanley, S. M. 1995, Presidential address. New horizons for paleontology, with two examples: The rise and fall of the Supertethys, and the cause of the modern ice age. Journal of Paleontology 69: 999-1007.

Stanley, S. M. 1996, Children of the Ice Age: How a Global Catastrophe Allowed Humans to Evolve. New York, Harmony Press, 278 pp. (Paperback ed. W. H. Freeman, New York, 1998.)

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Stanley, S. M. 1997, The Isthmus of Panama, the conveyor belt, and the cause of the modern ice age. Eos, Trans. Amer. Geophys. Union 17: S178.

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Stanley, S. M. 1999, Earth System History . W. H. Freeman, New York, 615 pp.

Stanley, S. M. and Hardie, L. A. 1999, Hypercalcification: Paleontology links plate tectonics and geochemistry to sedimentology. GSA Today 9: 1-7.

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Stanley, S. M. 1999,The geologic record suggests that a change in ocean circulation may greatly intensify the effects of global warming.Geol. Soc. Amer. Abstr. with Progr. 31: A61.

Stanley, S. M. 1999, The myth of the diversity plateau: high rates of extinction, not ecological saturation, stifled the diversification of Paleozoic marine life. Geol. Soc. Amer. Abstr. with Progr. 31: A337.

Stanley, S. M. 2000, A rarefaction method for estimating the completeness of the fossil record and changes in global diversity. Geol. Soc. of Amer.Abstr. with Progr. 32: A-131.

Stanley, S. M. 2000, Effects of long-term oscillations in the Mg/Ca ratio of seawater on dominant reef-building and sediment-building organisms. Geol. Soc. of Amer.Abstr. with Progr. 32: A-68.

Stanley, S. M. 2000 , Ocean circulation: conveyor of past and future climate, pp. 308-321 in The Earth Around Us, J. S. Schneiderman, ed. W. H. Freeman, San Francisco, 2000.

Stanley, S. M. 2001, Weak competition throughout the marine realm: consequences for population growth, rate of speciation, and global diversification. PaleoBios 21 (2, Supplement): 120.

Stanley, S. M., Ries, J. B., and Hardie, L. A. 2002, Low-magnesium calcite produced by coralline algae in seawater of Late Cretaceous composition. Proc. Nat. Acad. Sci. 99: 15323-15326.

Stanley, S. M., Ries, J. B., and Hardie, L. A. 2002, Production of low-magnesium calcite by three species of coralline algae grown in artificial seawater with the magnesium/calcium ratio of Cretaceous seas. Geological Society of America Abstracts with Programs 33: 167.

Stanley, S. M. 2002, A new state of the marine ecosystem during the late Paleozoic glacial interval. Geological Society of America Abstracts with Programs 33: 464

Stanley, S. M. and Powell, M. G. 2003, Depressed rates of origination and extinction during the late Paleozoic ice age: A new state for the global marine ecosystem. Geology 31: 877-880.

Stanley, S. M. 2003, Diversification of marine life throughout Phanerozoic time: unbridled exponential increase punctuated by mass extinctions. Geological Society of America Abstracts with Programs 34: 386.

Stanley, S. M., Ries, J. B., and Hardie, L. A. 2003, Observations and experiments on carbonate secretion in "calcite seas": why massive chalk deposits formed in Late Cretaceous time. Amer. Geophys. Union 2003 Fall Meeting Program and Abstracts F261.

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Stanley, S. M. Ries, J. B., and Hardie, L. A., 2004, Experiments on Carbonate Secretion: Why Massive Chalk Deposits Formed in Late Cretaceous Seas While Few, if Any, Organisms Secreted High-Magnesium Calcite. Abstract, 32nd International Geologic Congress, Florence, Italy.

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of seawater is lowered to a "calcite sea" level. Journal of Sedimentary Research 80: 6-16.

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(In Preparation)

Evidence for a decline in the diversity of the molluscan fauna of Florida since the Pliocene.

The rarity of marine bivalve mollusks in shallow waters adjacent to the Island of Oahu, Hawaii: a result of strong water movements and unstable seafloors.

Evidence that more than a third of Paleozoic articulate brachiopod genera were infaunal animals.

Evidence that the genal spines of trilobites served to stabilized them when righting themselves after being turned on their backs.

Evidence from the marine record of Florida that the great mammalian interchange between the North and South America began before three million years ago.

Environmental stratigraphy and bivalve paleoecology of a transgressive barrier island complex in the Pliocene Pinecrest Formation of Florida.

Evidence that the intensification of predation over geologic time has caused the decline of the monoplacophorans while gastropods have flourished by way of torsion.