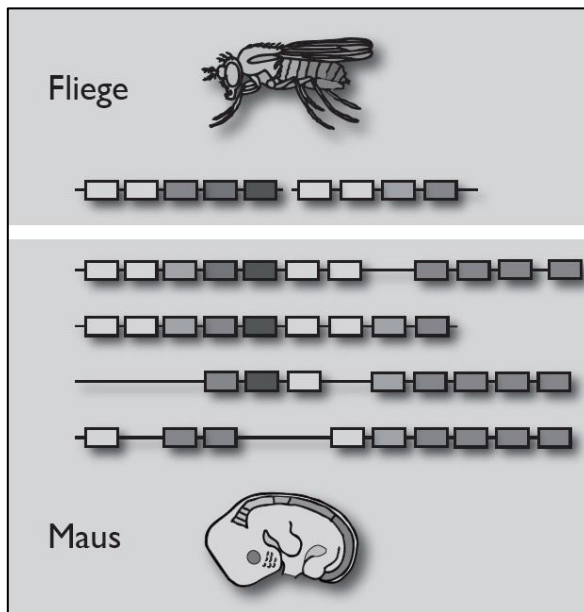


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WAS DARWIN NOCH NICHT WUSSTE

#### 44. Was sind Arten?

Ghiselin, Michael. „Species concepts, individuality, and objectivity,” *Biology and Philosophy* 2 (1987): 127-143.

Hull, David L. „Are species really individuals?” *Systematic Zoology* 25 (1976): 174-191.

Kitcher, Philip. „Species,” *Philosophy of Science* 51 (1984): 308-333.

Mayr, Ernst. „What is a species, and what is not?” *Philosophy of Science* 63 (1996): 262-277.

Mayr, Ernst. *Systematics and the origin of species from the viewpoint of a zoologist*. New York: Columbia UP, 1942. Reprint with a new introduction by the author. Cambridge, MA: Harvard UP, 1999.

Mishler, Brent D., & Michael J. Donoghue. „Species concepts: a case for pluralism,” *Systematic Zoology* 31 (1982): 491-503.

Wilkins, John S. *Species: The history of the idea*. Berkeley: University of California Press, 2009.

Wilson, Bradley E. „Changing conceptions of species,” *Biology and Philosophy* 11 (1996): 405-420.

**45. Wie entstehen neue Arten?**

- Barluenga, Marta, Kai N. Stölting, Walter Salzburger, Moritz Muschick & Axel Meyer. „Sympatric speciation in Nicaraguan crater lake cichlid fish,” *Nature* 439 (9 February 2006): 719-723.
- Benton, Michael J., & Philip C. J. Donoghue. „Paleontological evidence to date the tree of life,” *Molecular Biology and Evolution* 24 (2007): 26-53.
- Coyne, Jerry A., & H. Allen Orr. *Speciation*. Sunderland, MA: Sinauer Associates, 2004.
- Garant, Dany, Loeske E. B. Kruuk, Teddy A. Wilkin, Robin H. McCleery & Ben C. Sheldon. „Evolution driven by differential dispersal within a wild bird population,” *Nature* 433 (6 January 2005): 60-65.
- Mayr, Ernst. *What evolution is*. New York: Basic Books, 2001 (deutsche Ausg.: *Das ist Evolution*, 2003). Kapitel 9: „Speciation“
- McKinnon, Jeffrey S., Seiichi Mori, Benjamin K. Blackman, Lior David, David M. Kingsley, Leia Jamieson, Jennifer Chou & Dolph Schluter. „Evidence for ecology’s role in speciation,” *Nature* 429 (20 May 2004): 294-298.
- Meyer, Axel. „Darwins Geheimnis der Geheimnisse – Artbildung unter (sympatrischen) Bedingungen in den letzten 150 Jahren seit Darwin.“ In *Evolution: Zufall und Zwangsläufigkeit der Schöpfung*. Hrsg. von Norbert Elsner, Stephan Robbert Gradstein, Joachim Reitner & Hans-Joachim Fritz. Göttingen: Wallstein-Verl., 2009, S. 160-195.
- Rensch, Bernhard. *Das Prinzip geographischer Rassenkreise und das Problem der Artbildung*. Berlin: Borntraeger, 1929.

**46. Wie lange dauert es, bis eine neue Art entstanden ist?**

- Green, R., Krause, J., Briggs, A., Maricic, T., Stenzel, U., Kircher, M., Patterson, N., Li, H., Zhai, W., Fritz, M., Hansen, N., Durand, E., Malaspina, A., Jensen, J., Marques-Bonet, T., Alkan, C., Prufer, K., Meyer, M., Burbano, H., Good, J., Schultz, R., Aximu-Petri, A., Butthof, A., Hober, B., Hoffner, B., Siegemund, M., Weihmann, A., Nusbaum, C., Lander, E., Russ, C., Novod, N., Affourtit, J., Egholm, M., Verna, C., Rudan, P., Brajkovic, D., Kucan, Z., Gusic, I., Doronichev, V., Golovanova, L., Lalueza-Fox, C., de la Rasilla, M., Fortea, J., Rosas, A., Schmitz, R., Johnson, P., Eichler, E., Falush, D., Birney, E., Mullikin, J., Slatkin, M., Nielsen, R., Kelso, J., Lachmann, M., Reich, D. & Pääbo, S. „A draft sequence of the Neandertal genome,” *Science* 328 (2010): 710-722.
- Lack, David. *Darwin’s finches*. Cambridge: Cambridge UP, 1947.
- Meyer, Axel. „Kann man zusehen, wie Arten entstehen?“ In *Evolution: Wege des Lebens*. Hrsg. von Johann Grolle. München: Deutsche Verlags-Anstalt, 2005, S. 71-80.
- Thorpe, Roger S., Yann Surget-Groba & Helena Johansson. „Genetic tests for ecological and allopatric speciation in anoles on an island archipelago,” *PLoS Genetics* 6 (4) (2010): e1000929.
- Verheyen, Erik, Walter Salzburger, Jos Snoeks & Axel Meyer. „Origin of the superflock of cichlid fishes from lake Victoria, East Africa,” *Science* 300 (11 April 2003): 325-329.
- Vrba, E. S. „Ecology in relation to speciation rates: some case histories of Miocene-Recent mammal clades,” *Evolutionary Ecology* 1 (1987): 283-300.

Weir, Jason T., & Dolph Schluter. „The latitudinal gradient in recent speciation and extinction rates of birds and mammals,” *Science* 315 (16 March 2007): 1574-1576.

#### **47. Wie hat die Erfindung der Sexualität die Evolution verändert?**

Adams, Mark B. „From ‘gene fund’ to ‘gene pool’: on the evolution of evolutionary language,” *Studies in History of Biology* 3 (1979): 241-285.

Butlin, Roger. „Evolution of sex: The costs and benefits of sex: new insights from old asexual lineages,” *Nature Reviews Genetics* 3 (2002): 311-317.

Mayr, Ernst. *What evolution is*. New York: Basic Books, 2001 (deutsche Ausg.: *Das ist Evolution*, 2003). Vgl. Kapitel 9: „The units of diversity: species“

Wilkins, Adam S., & Robin Holliday. „The evolution of meiosis from mitosis,” *Genetics* 181 (2009): 3-12.

Zimmer, Carl. „On the origin of sexual reproduction,” *Science* 324 (5 June 2009): 1254-1256.

#### **48. Wie wird der Genpool aufgefüllt?**

Kurland, C. G., B. Canback & Otto G. Berg. „Horizontal gene transfer: A critical view,” *Proceedings of the National Academy of Sciences (USA)* 100 (2003): 9658-9662.

Mikkelsen, Tarjei S., et al. „Genome of the marsupial *Monodelphis domestica* reveals innovation in non-coding sequences,” *Nature* 447 (10 May 2007): 167-177.

Morgan, Th. H., A. H. Sturtevant, H. J. Muller, & C. B. Bridges. *The mechanism of Mendelian heredity*. New York: Holt, 1915. Rev. ed. New York: Henry Holt, 1922.

Ochman, Howard, Jeffrey G. Lawrence & Eduardo A. Groisman. „Lateral gene transfer and the nature of bacterial innovation,” *Nature* 405 (18 May 2000): 299-304.

Olendorf, Robert, F. Helen Rodd, David Punzalan, Anne E. Houde, Carla Hurt, David N. Reznick & Kimberly A. Hughes. „Frequency-dependent survival in natural guppy populations,” *Nature* 441 (1 June 2006): 633-636.

Stoneking, Mark. „Single nucleotide polymorphisms: From the evolutionary past,” *Nature* 409 (2001): 821-22.

Storch, Volker, Ulrich Welsch & Michael Wink. *Evolutionsbiologie*. 2. Aufl. Berlin: Springer, 2007. Vgl. Kapitel 3: „Mechanismen und molekulare Ursachen der Evolution“

#### **49. Sind Mutationen immer schädlich?**

Junker, Thomas. „Stichwort: Neutrale Evolution,” *Naturwissenschaftliche Rundschau* 62 (2009): 389-390.

Kimura, Motoo. „Evolutionary rate at the molecular level,” *Nature* 217 (1968): 624-626.

Kimura, Motoo. *The neutral theory of molecular evolution*. Cambridge: Cambridge UP, 1983 (deutsche Ausg.: *Die Neutralitätstheorie der molekularen Evolution*, 1987).

## 50. Wie entstehen neue Gene?

- Biémont, Christian, & Cristina Vieira. „Junk DNA as an evolutionary force,” *Nature* 443 (2006): 521-524.
- Erwin, Douglas, James Valentine & David Jablonski. „The origin of animal body plans,” *American Scientist* 85 (1997): 126-137.
- Garcia-Fernández, Jordi, & Peter W. H. Holland. „Archetypal organization of the amphioxus Hox gene cluster,” *Nature* 370 (1994): 563-66.
- Heinen, Tobias J. A. J., Fabian Staubach, Daniela Häming & Diethard Tautz. „Emergence of a new gene from an intergenic region,” *Current Biology* 19 (03 September 2009): 1527-1531.
- Jakob, Wolfgang, Sven Sagasser, Stephen Dellaporta, Peter Holland, Kerstin Kuhn & Bernd Schierwater. „The Trox-2 Hox/ ParaHox gene of Trichoplax (Placozoa) marks an epithelial boundary,” *Development Genes and Evolution* 214 (2004): 170-175.
- Rohner, Nicolas, Miklós Bercsényi, László Orbán, Maria E. Kolanczyk, Dirk Linke, Michael Brand, Christiane Nüsslein-Volhard & Matthew P. Harris. „Duplication of *fgfr1* permits fgf signaling to serve as a target for selection during domestication,” *Current Biology* 19 (2009): 1642-1647.
- Swalla, B. J. „Building divergent body plans with similar genetic pathways,” *Heredity* 97 (2006): 235-243.
- Van de Peer, Yves, Steven Maere & Axel Meyer. „The evolutionary significance of ancient genome duplications.” *Nature Reviews Genetics* 10 (2009): 725-732.

## 51. Kann man die Geschwindigkeit der Evolution messen?

- Benton, Michael J., & Philip C. J. Donoghue. „paleontological evidence to date the tree of life,” *Molecular Biology and Evolution* 24 (2007): 26-53.
- Haldane, J. B. S. „Suggestions as to quantitative measurement of rates of evolution,” *Evolution* 3 (1949): 51-56.
- Kumar, Sudhir & Sankar Subramanian. „Mutation rates in mammalian genomes,” *Proceedings of the National Academy of Sciences (USA)* 99 (2002): 803-808.
- Zuckermandl, Emile, & Linus Pauling. „Evolutionary divergence and convergence in proteins.” In V. Bryson & H. J. Vogel (eds.). *Evolving genes and proteins*. New York: Academic Press, 1965, pp. 97-166.

## 52. Wie viele molekulare Uhren gibt es?

- Douzery, Emmanuel J. P., Elizabeth A. Snell, Eric Baptiste, Frédéric Delsuc & Hervé Philippe. „The timing of eukaryotic evolution: Does a relaxed molecular clock reconcile proteins and fossils?” *Proceedings of the National Academy of Sciences (USA)* 101 (26 October 2004): 15386-15391.
- Kumar, Sudhir. „Molecular clocks: four decades of evolution,” *Nature Reviews Genetics* 6 (August 2005): 654-662.
- Morgan, Gregory J. „Emile Zuckermandl, Linus Pauling, and the molecular evolutionary clock, 1959-1965,” *Journal of the History of Biology* 31 (1998): 155-178.

Ochman, Howard, & Allan C. Wilson. „Evolution in bacteria: evidence for a universal substitution rate in cellular genomes,” *Journal of Molecular Evolution* 26 (1987):74-86.

Xue, Yali, Qiuju Wang, Quan Long, Bee Ling Ng, Harold Swerdlow, John Burton, Carl Skuce, Ruth Taylor, Zahra Abdellah, Yali Zhao, Asan, Daniel G. MacArthur, Michael A. Quail, Nigel P. Carter, Huanming Yang & Chris Tyler-Smith. „Human Y chromosome base-substitution mutation rate measured by direct sequencing in a deep-rooting pedigree,” *Current Biology* 19 (15 September 2009): 1453-1457.

### **53. Was war das folgenreichste Ereignis in der Geschichte der Organismen?**

Geus, Armin, & Ekkehard Höxtermann (Hrsg.). *Evolution durch Kooperation und Integration. Zur Entstehung der Endosymbiosetheorie in der Zellbiologie*. Marburg: Basilisken-Presse, 2007.

Margulis, Lynn. *Origin of eukaryotic cells*. New Haven: Yale UP, 1970.

Maynard Smith, John. „Game theory and the evolution of cooperation.” In *Evolution from molecules to men*. Edited by D. S. Bendall. Cambridge: Cambridge UP, 1983, pp. 445-456.

Mereschkowsky, Constantin. „Über Natur und Ursprung der Chromatophoren im Pflanzenreiche,” *Biologisches Centralblatt* 25 (1905): 593-604.

Pennisi, Elizabeth. „The birth of the nucleus,” *Science* 305 (6 August 2004): 766-768.

Poole, Anthony, & David Penny. „Eukaryote evolution: Engulfed by speculation,” *Nature* 447 (21 June 2007): 913.

### **54. Was kam zuerst: Pflanzen oder Tiere?**

Gray, Michael W., Gertraud Burger & B. Franz Lang. „The origin and early evolution of mitochondria,” *Genome Biology* 2 (2001): reviews 1018.1-1018.5.

Kutschera, Ulrich, & Karl J. Niklas. „Endosymbiosis, cell evolution, and speciation,” *Theory in Biosciences* 124 (2005): 1-24.

McFadden, Geoffrey Ian. „Primary and secondary endosymbiosis and the origin of plastids,” *Journal of Phycology* 37 (2001): 951-959.

### **55. Warum reden Evolutionsbiologen so gerne vom Wetter?**

Gillman, Len N., D. Jeanette Keeling, Howard A. Ross & Shane D. Wright. „Latitude, elevation and the tempo of molecular evolution in mammals,” *Proceedings of the Royal Society B* 276 (2009): 3353-3359.

Grasby, Stephen E., Hamed Sanei & Benoit Beauchamp. „Catastrophic dispersion of coal fly ash into oceans during the latest Permian extinction,” *Nature Geoscience* 4 (2011).

Hoffman, Paul F., Alan J. Kaufman, Galen P. Halverson & Daniel P. Schrag. „A Neoproterozoic snowball Earth,” *Science* 281 (1998): 1342-1346.

Kutschera, Ulrich. „Symbiogenesis, natural selection, and the dynamic Earth,” *Theory in Biosciences* 128 (2009): 191-203.

Walker, Gabrielle. *Snowball Earth: the story of the great global catastrophe that spawned life as we know it*. New York: Crown Publishers, 2003 (deutsche Ausg.: *Schneeball Erde: die Geschichte der globalen Katastrophe, die zur Entstehung unserer Artenvielfalt führte*, 2003).

Wegener, Alfred. *Die Entstehung der Kontinente und Ozeane*. Braunschweig: Vieweg, 1915.

## **56. Was bleibt von Darwin?**

Ayala, Francisco J. „Darwin’s greatest discovery: Design without designer,” *Proceedings of the National Academy of Sciences (USA)* 104, Suppl. 1 (15 May 2007): 8567-8573.

Gee, Henry, Rory Howlett & Philip Campbell. „15 evolutionary gems,” *Nature* (January 2009) <http://www.nature.com/evolutiongems>

Padian, Kevin. „Darwin’s enduring legacy,” *Nature* 451 (7 February 2008): 632-634.