

## REFERENCES CITED

1. Amos, W. S., S. J. Sawcer, R. Feakes, and D. C. Rubinsztein. 1996. Microsatellites show mutational bias and heterozygote instability. *Nat. Genet.* 13:390-391.
2. Awadalla, P., and K. Ritland. 1997. Microsatellite variation and evolution in the *Mimulus guttatus* species complex with contrasting mating systems. *Mol. Biol. Evol.* 14:1023-1034.
3. Baldwin, B. G. 1997. Adaptive radiation of the Hawaiian silversword alliance: congruence and conflict of phylogenetic evidence from molecular and non-molecular investigations. *In: Molecular Evolution and Adaptive Radiation* (ed. T. J. Givnish and K. J. Sytsma), pp. 103-128. New York, Cambridge University Press.
4. ———, D. W. Kyhos, and J. Dvorak. 1990. Chloroplast DNA evidence and adaptive radiation in the Hawaiian silversword alliance (Madiinae, Asteraceae). *Ann. Missouri Bot. Gard.* 77:96-109.
5. ———, and R. H. Robichaux. 1995. Historical biogeography and ecology of the Hawaiian silversword alliance (Asteraceae): new molecular phylogenetic perspectives. *In: Hawaiian Biogeography: Evolution on a Hot Spot Archipelago* (ed. W. L. Wagner and V. A. Funk), pp. 259-287. Washington D. C., Smithsonian Institution Press.
6. Barton, N. H. 1989. Founder effect speciation. *In: Speciation and Its Consequences* (ed. D. Otte and J. A. Endler), pp. 229-256. Sunderland, Massachusetts, Sinauer Associates.
7. ———, and B. Charlesworth. 1984. Genetic revolutions, founder effects, and speciation. *Ann. Rev. Ecol. Syst.* 15:133-164.
8. Blanquer-Maumont, A., and B. Crouau-Roy. 1995. Polymorphism, monomorphism, and sequences in conserved microsatellites in primate species. *J. Mol. Evol.* 41:492-497.
9. Bock, W. J. 1970. Microevolutionary sequences as a fundamental concept in macroevolutionary pathways. *Evolution* 24:704-722.
10. Bruford, M. W., and R. K. Wayne. 1993. Microsatellites and their application to population genetic studies. *Curr. Opin. Genet. Dev.* 3:939-943.
11. Bush, G. L., and D. J. Howard. 1986. Allopatric and non-allopatric speciation: assumptions and evidence. *In: Evolutionary Processes and Theory.* (ed. S. Karlin and E. Nevo), pp. 411-438. New York, Academic Press.
12. Carlquist, S. 1980. *Hawaii, A Natural History: Geology, Climate, Native Flora and Fauna Above the Shoreline*, 2nd ed. Pacific Tropical Garden, Lawai, Kauai.

13. Carr, G. D. 1985. Monograph of the Hawaiian Madiinae (Asteraceae): *Argyroxiphium*, *Dubautia*, and *Wilkesia*. *Allertonia* 4:1-123.
14. —, and D. W. Kyhos. 1981. Adaptive radiation in the Hawaiian silversword alliance (Compositae-Madiinae). I. Cytogenetics of spontaneous hybrids. *Evolution* 35:543-556.
15. —, and —. 1986. Adaptive radiation in the Hawaiian silversword alliance (Compositae-Madiinae). II. Cytogenetics of artificial and natural hybrids. *Evolution* 40:959-976.
16. —, R. H. Robichaux, M. S. Witter and D. W. Kyhos. 1989. Adaptive radiation of the Hawaiian silversword alliance (Compositae-Madiinae): a comparison with Hawaiian picture-winged *Drosophila*. *In: Genetics, Speciation and the Founder Principle*. (ed. L. V. Giddings, K. Y. Kaneshiro, and W. W. Anderson), pp. 79-97. New York, Oxford University Press.
17. Carson, H. L. 1971. Speciation and the Founder Principle. University of Missouri Stadler Symposia 3:51-70.
18. —. 1986. Sexual selection and speciation. *In: Evolutionary Processes and Theory*. (ed. S. Karlin and E. Nevo), pp. 391-409. New York, Academic Press.
19. —. 1987. Tracing ancestry with chromosomal sequences. *Trends Ecol. Evol.* 2:203-307.
20. —. 1990. Evolutionary process as studied in population genetics: clues from phylogeny. *Oxford Surveys in Evolutionary Biology* 7:129-156.
21. —. 1992. Inversions in Hawaiian *Drosophila*. *In: Drosophila Inversion Polymorphism*. (ed. C. B. Krimbas and J. R. Powell), pp.407-439. Ann Arbor, MI, CRS Pressit.
22. —, and D. A. Clague. 1995. Geology and biogeography of the Hawaiian Islands. *In: Hawaiian Biogeography: Evolution on a Hot Spot Archipelago* (ed. W. L. Wagner and V. A. Funk), pp. 14-29. Washington D. C., Smithsonian Institution Press.
23. —, and K. Y. Kaneshiro. 1976. *Drosophila* of Hawaii: Systematics and ecological genetics. *Ann. Rev. Ecol. Syst.* 7:311-345.
24. —, and A. R. Templeton. 1984. Genetic revolutions in relation to speciation phenomena: the founding of new populations. *Ann. Rev. Ecol. Syst.* 15:97-131.
25. Clague, D. A., and G. B. Dalrymple. 1987. The Hawaiian-Emporer volcanic chain. Part 1. *In: Volcanism in Hawaii* (ed. R. W. Decker, T. L. Wright and P. H. Stauffer), vol. 1, pp. 5-54. U.S. Geologic Survey Professional Paper No. 1350, U. S. Government Printing Office, Washington D. C.
26. Craddock, E. M., and H. L. Carson. 1989. Chromosomal inversion patterning and population differentiation in a young insular species. *Proc. Natl. Acad. Sci. USA* 86:4798-4802.

27. Dallas, J. F. 1992. Estimation of microsatellite mutation rates in recombinant inbred strains of mouse. *Mammalian Genome* 3:452-456.
28. DeSalle, R. 1995. Molecular approaches to biogeographic analyses of Hawaiian Drosophilidae. In *Hawaiian Biogeography*. Pp. 72-89. Washington, D. C.: Smithsonian Institution Press.
29. Di Rienzo, A., A. C. Peterson, J. C. Garza, A. M. Valdes, M. Slatkin, and N. B. Freimer. 1994. Mutational processes of simple-sequence repeat loci in human populations. *Proc. Natl. Acad. Sci. USA*. 91:3166-3170.
30. Diwan, N., and P. B. Cregan. 1997. Automated sizing of fluorescent-labeled simple sequence repeat (SSR) markers to assay genetic variation in soybean. *Theor. Appl. Genet.* 95:723-733.
31. Edwards, A., H. A. Hammond, L. Jin, C. T. Caskey, and R. Chakraborty. 1992. Genetic variation at five trimeric and tetrameric tandem repeat loci in four human population groups. *Genomics* 12:241-253.
32. Edwards, K. J., J. H. A. Barker, A. Daly, C. Jones, and A. Karp. 1996. Microsatellite libraries enriched for several microsatellite sequences in plants. *Biotechniques* 20:758-760.
33. Estoup, A., L. Garnery, M. Solognac, and J.-M. Cornuet. 1995. Microsatellite variation in honey bee (*Apis mellifera* L.) population: hierarchical genetic structure and test of the infinite allele and stepwise mutation models. *Genetics* 140:679-695.
34. Excoffier, L., P. E. Smouse, and J. M. Quattro. 1992. Analysis of molecular variance inferred from metric distance among DNA haplotypes. Application to human mitochondrial DNA restriction data. *Genetics* 131:479-491.
35. Freed, L. A., S. Conant, and R. C. Fleischer. 1987. Evolutionary ecology and radiation of Hawaiian passerine birds. *Trends Ecol. Evol.* 2:196-203.
36. Friar, E. A., R. H. Robichaux, and D. W. Mount. 1996. Molecular genetic variation following a population crash in the endangered Mauna Kea silversword, *Argyroxiphium sandwicense* ssp. *sandwicense* (Asteraceae). *Mol. Ecol.* 5:687-691.
37. Funk, V. A., and W. L. Wagner. 1995. Biogeographic patterns in the Hawaiian Islands. In: *Hawaiian Biogeography: Evolution on a Hot Spot Archipelago* (ed. W. L. Wagner and V. A. Funk), pp. 379-419. Washington D. C., Smithsonian Institution Press.
38. Futuyma, D. J., and G. C. Mayer. 1980. Non-allopatric speciation in animals. *Syst. Zoo.* 29:254-271.

39. Garza, J. C., M. Slatkin, and N. B. Freimer. 1995. Microsatellite allele frequencies in humans and chimpanzees, with implications for constraints on allele size. *Mol. Biol. Evol.* 12:594-603.
40. Goldstein, D. B., A. Ruiz Linares, L. L. Cavalli-Sforza, and M. W. Feldman. 1995a. Genetic absolute dating based on microsatellites and the origin of modern humans. *Proc. Natl. Acad. Sci. USA* 92:6623-6727.
41. ———, ———, ———, and ———. 1995b. An evaluation of genetic distances for use with microsatellite loci. *Genetics* 139:463-471.
42. Goudet, J. 1995. FSTAT (version 1.2): a computer program to calculate F-statistics. *J. Hered.* 86:485-486.
43. Grant, P. R., and B. R. Grant. 1989. Sympatric speciation and Darwin's finches. *In: Speciation and Its Consequences.* (ed. D. Otte and J. A. Endler), pp. 433-457. Sunderland, MA, Sinauer Associates.
44. Hollocher, H. 1996. Island hopping in *Drosophila*: patterns and processes. *Phil. Trans. R. Lond. B* 351:735-743.
45. Hudson, R. R. 1990. Gene genealogies and the coalescent process. *Oxford Surveys in Evolutionary Biology* 7:1-44.
46. ———, D. D. Boos, and N. L. Kaplan. 1992. A statistical test to detect geographic subdivision. *Mol. Biol. Evol.* 9:138-151.

47. Jeang, K. T., and G. S. Hayward. 1983. A cytomegalovirus DNA sequence containing tracts of tandemly repeated CA dinucleotides hybridizes to highly repetitive dispersed elements in mammalian cell genomes. *Mol. Cell. Biol.* 3:1389-1402.
48. Kaneshiro, K. Y., R. G. Gillespie, and H. L. Carson. 1995. Chromosomes and male genitalia of Hawaiian *Drosophila*: tools for interpreting phylogeny and geography. *In: Hawaiian Biogeography: Evolution on a Hot Spot Archipelago* (ed. W. L. Wagner and V. A. Funk ), pp. 57-71. Washington, D C., Smithsonian Institution Press.
49. Levin, D. A. 1993. Local speciation in plants: the rule not the exception. *Syst. Bot.* 18:197-208.
50. Levinson, G., and G. A. Gutman. 1987. Slipped-strand mispairing: a major mechanism for DNA sequence evolution. *Mol. Biol. Evol.* 4:203-221.
51. Maddison, W. P., and D. R. Maddison. 1992. *MacClade: analysis of phylogeny and character evolution, version 3.05*. Sunderland, MA, Sinauer Associates.
52. Mayr, E. 1954. Change of genetic environment and evolution. *In: Evolution as a Process* (ed. J. Huxley, A. C. Hardy, and E. B. Ford), pp. 157-180. London, Allen and Unwin.
53. ———. 1963. *Animal Species and Evolution*. Cambridge, MA, Harvard University Press.
54. Mellersh, C., and J. Sampson. 1993. Simplifying detection of microsatellite length alleles. *BioTechniques* 15:582-584.
55. Morgante, M., and A. M. Oliveri. 1993. PCR amplified microsatellites in plant genetics. *Plant J.* 3:175-182.
56. Nei, M. 1978. Estimation of average heterozygosity and genetic distance from a small number of individuals. *Genetics* 23:341-369.
57. ———. 1987. *Molecular Evolutionary Genetics*. Columbia University Press, New York.
58. ———, F. Tajima, and Y. Tateno. 1983. Accuracy of estimated phylogenetic trees from molecular data. *J. Mol. Evol.* 19:153-170.
59. Paterson, H. E. H. 1981. The continuing search for the unknown and the unknowable: a critique of contemporary ideas on speciation. *South African Journal of Science* 77:113-118.
60. Patterson, R. 1995. Phylogenetic analysis of Hawaiian and other Pacific species of *Scaevola* (Goodeniaceae). *In: Hawaiian Biogeography: Evolution on a Hot Spot Archipelago* (ed. W. L. Wagner and V. A. Funk ), pp. 363-378. Washington, D C., Smithsonian Institution Press.

61. Pepin, L., Y. Amigues, A. Lepingle, and J.-L. Berthier. 1995. Sequence conservation of microsatellites between *Bos taurus* (cattle), *Capra hircus* (goat) and related species. Examples of use in parentage testing and phylogeny analysis. *Heredity* 74:53-61.
62. Primmer, C. R., A. P. Moller, and H. Ellegren. 1996. A wide-ranging survey of cross-species microsatellite amplification in birds. *Mol. Ecol.* 5:365-378.
63. Provine, W. B. 1989. Founder effects and genetic revolutions in microevolution and speciation: an historical perspective. *In: Genetics, Speciation and the Founder Principle* (ed. L. V. Giddings, K. Y. Kaneshiro and W. W. Anderson), pp. 43-76, Oxford University Press.
64. Queller, D. C., J. E. Strassman, and C. R. Hughes. 1993. Microsatellites and kinship. *Trends. Ecol. Evol.* 8:285-288.
65. Richards, R. I., and G. R. Sutherland. 1992. Dynamic mutations: a new class of mutations causing human disease. *Cell* 70:709-712.
66. Robichaux, R. H., G. D. Carr, M. Liebman, and R. W. Percy. 1990. Adaptive radiation of the Hawaiian silversword alliance (Compositae-Madiinae): ecological, morphological, and physiological diversity. *Ann. Missouri Bot. Gard.* 77:64-72.
67. Rubinsztein, D. C., W. Amos, J. Leggo, S. Goodburn, S. Jain, S. H. Li, R. L. Margolis, C. A. Ross, and M. Ferguson-Smith. 1995. Microsatellites are generally longer in humans compared to their homologues in non-human primates: evidence for directional evolution at microsatellite loci. *Nat. Genet.* 10:337-343.
68. Shriver, M. D., L. Jin, E. Boerwinkle, R. Deka, R. E. Ferrell, and R. Chakraborty. 1993. A novel measure of genetic distance for highly polymorphic tandem repeat loci. *Mol. Biol. Evol.* 12:914-920.
69. Slatkin, M. 1995. A measure of population subdivision based on microsatellite allele frequencies. *Genetics* 139:457-462.
70. Smathers, G. A., and D. Mueller-Dombois. 1974. Invasion and recovery of vegetation after a volcanic eruption in Hawaii. National Park Service Monograph Series No. 5.
71. Takezaki, N., and M. Nei. 1996. Genetic distances and reconstruction of phylogenetic trees from microsatellite DNA. *Genetics* 144:389-399.
72. Tarr, C. L., and R. C. Fleischer. 1995. Evolutionary relationships of the Hawaiian honeycreepers (Aves, Drepanidinae). *In: Hawaiian Biogeography: Evolution on a Hot Spot Archipelago* (ed. W. L. Wagner and V. A. Funk), pp. 147-159, Smithsonian Institution Press.
73. Tautz, D. 1989. Hypervariability of simple sequences as a general source for polymorphic DNA markers. *Nucleic Acids Res.* 17:6463-6471.

74. ———, and M. Renz. 1984. Simple sequences are ubiquitous repetitive components of eukaryotic genomes. *Nucleic Acids Res.* 12:4127-4138.
75. Templeton, A. R. 1980. The theory of speciation via the founder principle. *Genetics* 94: 1011-1038.
76. ———. 1981. Mechanisms of speciation — a population genetic approach. *Annu. Rev. Ecol. System.* 12:23-48.
77. ———. 1996. Experimental evidence for the genetic-transilience model of speciation. *Evolution* 50:909-915.
78. Throckmorton, L. H. 1966. The relationships of the endemic Hawaiian *Drosophilidae*. University of Texas Publication 6615:335-396.
79. Valdes, A. M., M. Slatkin, and N. B. Freimer. 1993. Allele frequencies at microsatellite loci: the stepwise mutation model revisited. *Genetics* 133:737-749.
80. Valsecchi, E., and 12 co-authors. 1997. Microsatellite genetic distances between oceanic populations of the humpback whale (*Megaptera novaeangliae*). *Mol. Biol. Evol.* 14:355-362.
81. Weber, J. L., and C. Wong. 1993. Mutation of human short tandem repeats. *Hum. Mol. Genet.* 2:1123-1128.
82. Weir, B. S., and C. C. Cockerham. 1984. Estimating F-statistics for the analysis of population structure. *Evolution* 38:1358-1370.
83. Whitton, J., L. H. Rieseberg, and M. C. Ungerer. 1997. Microsatellite loci are not conserved across the Asteraceae. *Mol. Biol. Evol.* 14:204-209.
84. Witter, M. S., and G. D. Carr. 1988. Adaptive radiation and genetic differentiation in the Hawaiian silversword alliance (Compositae; Madiinae). *Evolution* 42:1278-1287.
85. Wood, T. K. 1980. Divergence in the *Enchenopa binotata* Say complex (Homoptera: Membracidae) effected by host plant adaptation. *Evolution* 34:147-160.
86. ———, and M. C. Keese. 1990. Host-plant-induced assortative mating in *Enchenopa* treehoppers. *Evolution* 36:233-242.
87. Wright, S. W. 1965. The interpretation of F-statistics with special regard to systems of mating. *Evolution* 19:358-420.
88. Wu, K.-S., and S. D. Tanksley. 1993. Abundance, polymorphism and genetic mapping of microsatellites in rice. *Mol. Gen. Genet.* 241:225-235.

89. Ziegle, J. S., J. Su, K. P. Corcoran, L. Nie, E. Maynard, L. B. Hoff, L. J. McBride, M. N. Kronick, and S. R. Diehl. 1992. Application of automated DNA sizing technology for genotyping microsatellite loci. *Genomics* 14:1026-1031.
90. Zimmermann, R., C. Ullmann, and W. Schaper. 1996. Preparation of miniprep-DNA for automated non-radioactive sequencing. *BioTechniques* 21:824-826.