

IV. Phenotypic and genomic evolution along the line of descent in the case-study population through the origin of the EQU function at step 111

The entire line of descent is available at myxo.css.msu.edu/papers/nature2003/ along with functional-genomic arrays for all 345 genotypes in the line of descent.

Legend: PD = phylogenetic depth. Born = update when genotype first appeared. Functions 0 and 1 denote inability or ability, respectively, to perform nine logic functions: NOT, NAND, AND, OR_N, OR, AND_N, NOR, XOR, and EQU. Fit = fitness relative to immediate parent calculated as product of replication efficiency and computational merit; gains are shown in bold, losses in italics. Mutations are highlighted in bold in the genome sequences, as are changes in functions performed.

PD	Born	Functions	Fit	Genome Sequence
0	0	0 0 0 0 0 0 0 0 0 0	—	rucavcccccccccccccccccccccccccccccccccccutycasvab
1	32	0 0 0 0 0 0 0 0 0 0	1.00	rucavcccccccccccccccccccccccccccccccccc h cccccccutycasvab
2	93	0 0 0 0 0 0 0 0 0 0	1.01	rucavcccccccccccccccccccccccccccccccccc p cccccccccutycasvab
3	143	0 0 0 0 0 0 0 0 0 0	1.36	rucavccccccccccccccccccccccccccccccccccp_ c cccccccccutycastvab
4	225	0 0 0 0 0 0 0 0 0 0	1.01	rucavccccccccccccccccccccccccccccccccccp n chcccccccutycastvab
5	284	0 0 0 0 0 0 0 0 0 0	1.01	rucavcc z cccccccccccccccccccccccccccccccccc p cnchcccc q cutycastvab
6	352	0 0 0 0 0 0 0 0 0 0	1.00	rucavcczcccccccccccccccccccccccccccccccc q cnchccccqcutycastvab
7	361	0 0 0 0 0 0 0 0 0 0	1.00	rucav coz ccccccccccccccccccccccccccccccccqcnchccccqcutycastvab
8	379	0 0 0 0 0 0 0 0 0 0	1.01	rucavcozcccccccccccccccccccccccc x ccqcnchccccqcutycastvab
9	411	0 0 0 0 0 0 0 0 0 0	1.00	rucavcozcccccccccccccccccccccc a cxcqcnchccccqcutycastvab
10	567	0 0 0 0 0 0 0 0 0 0	1.00	rucavcozccccccccccccccccccccccax e qcnchccccqcutycastvab
11	734	0 0 0 0 0 0 0 0 0 0	1.00	rucavcozcccccccccccccccccccccc a mxecqcnchccccqcutycastvab
12	775	0 0 0 0 0 0 0 0 0 0	1.00	rucavcozcc s cccccccccccccccccc a mxecqcnchccccqcutycastvab
13	793	0 0 0 0 0 0 0 0 0 0	<i>0.99</i>	rucavcozcc sci cccccccccccccc a mxecqcnchccccqcutycastvab
14	835	0 0 0 0 0 0 0 0 0 0	1.00	rucavcozcc sci cccccccccccccc a mxelqcnchccccqcutycastvab
15	949	0 0 0 0 0 0 0 0 0 0	1.00	rucavcozjcc sci cccccccccccccc a mxelqcnchccccqcutycastvab
16	963	0 0 0 0 0 0 0 0 0 0	<i>0.99</i>	rucavcozjcc sci cccccccccccccc a mxelqcn q hccccqcutycastvab
17	1118	0 1 0 0 0 0 0 0 0 0	2.01	rucavcozjcc sci cccccccccccccc a mxelqcn q h c pcqcutycastvab
18	1194	0 1 0 0 0 0 0 0 0 0	1.01	rucavcotzjcc sci cccccccccccccc a mxelqcn q h c pcqcutycastvab
19	1250	0 1 0 0 0 0 0 0 0 0	1.01	rucavcotzj ci sc i cccccccccccccc a mxelqcn q h c pcqcutycastvab
20	1252	0 0 1 0 0 0 0 0 0 0	2.01	rucavcotzj ci sc i cccccccccccccc a mxelqcn q h pc pcqcutycastvab
21	1263	0 0 0 1 0 0 0 0 0 0	1.00	rucavcotzj ci sc ic cc n cccc k camqelqcn q h pc pcqcutycastvab
22	1289	0 1 0 1 0 0 0 0 0 0	2.00	rucavcotzj ci sc ic cc nc cccc k camqelq cp qh pc pcqcutycastvab
23	1325	0 1 0 1 0 0 0 0 0 0	1.00	rucavcotzj ci sc ic cd n cccc ck camqelq cp qh pc pcqcutycastvab
24	1433	0 1 0 1 0 0 0 0 0 0	<i>0.99</i>	rucavcotzj ci sc ic cd n ce cc ckcamqelq cp qh pc pcqcutycastvab
25	1439	0 1 0 1 0 0 0 0 0 0	1.15	rucavcotzj ci sc ic cd n ce cc ckcamqelq cp qh pc pcqcutycast tv ab
26	1455	0 1 0 1 0 0 0 0 0 0	<i>0.99</i>	rucavcotzj ci sc ic cd n ce cc ck r amqelq cp qh pc pcqcutycast tv ab
27	1645	0 1 0 1 0 0 0 0 0 0	1.01	rucavcotzj ai sc ic cd n ce cc ck r amqelq cp qh pc pcqcutycast tv ab
28	1910	0 1 0 1 0 0 0 0 0 0	1.00	rucavcotzj ai sc ic cd n ce cc cyramqelq cp qh pc pcqcutycast tv ab
29	1947	0 1 0 1 0 0 0 0 0 0	<i>0.98</i>	rucavcotz sa isc ic cd n ce cc cyramqelq cp qh pc pcqcutycast tv ab
30	2286	0 1 0 1 0 0 0 0 0 0	1.01	rucavcotz sa isc ic cd n ce ic cyramqelq cp qh pc pcqcutycast tv ab
31	2479	0 1 0 1 0 0 0 0 0 0	1.00	rucavcotz sa jsc ic cd n ce ic cyramqelq cp qh pc pcqcutycast tv ab
32	2669	0 1 0 1 0 0 0 0 0 0	1.00	rucavcot d sa j sc ic cd n ce ic cyramqelq cp qh pc pcqcutycast tv ab
33	2711	0 1 0 1 0 0 0 0 0 0	1.01	rucavcot d q a jsc ic cd n ce ic cyramqelq cp qh pc pcqcutycast tv ab
34	2786	1 1 0 1 0 0 0 0 0 0	2.00	rucavcot d q a jsc ic cd n co iccyramqelq cp qh pc pcqcutycast tv ab
35	2828	1 1 0 1 0 0 0 0 0 0	1.00	rucavcot d q a q s ic ic cd n co iccyramqelq cp qh pc pcqcutycast tv ab
36	2830	1 1 0 1 0 0 0 0 0 0	<i>0.99</i>	rucavcot d q a q s ic ic cd n co scccyramqelq cp qh pc pcqcutycast tv ab
37	2987	1 1 0 1 0 0 0 0 0 0	1.00	rucavcot d q a q s ic ic cd n co scccyram q etq cp qh pc pcqcutycast tv ab
38	3420	1 1 0 1 0 0 0 0 0 0	1.03	rucavcot d q a q s q ic ic cd n co scccyram q etq cp qh pc pcqcutycast tv ab
39	3551	1 1 0 1 0 0 0 0 0 0	1.00	rucavc i tdq a q s q ic ic cd n co scccyram q etq cp qh pc pcqcutycast tv ab

40 3808 0 1 1 1 0 0 0 0 0 **2.00** rucavc~~i~~tdqagsqcpccdnccosccyramqetqcpqhpcpcqcutycastttvab
41 3914 0 1 1 1 0 0 0 0 0 **1.01** rucavc~~i~~tdqagsqcpccdnccosccypamqetqcpqhpcpcqcutycastttvab
42 3939 0 1 1 1 0 1 0 0 0 **8.00** rucavc~~i~~tdqagsqcpcldnccosccypamqetqcpqhpcpcqcutycastttvab
43 4190 0 1 1 1 0 1 0 0 0 1.00 rucavc~~o~~tdqagsqcpcldnccosccypamqetqcpqhpcpcqcutycastttvab
44 4646 0 1 1 1 0 1 0 0 0 **1.08** rucavc~~o~~tdqagsqcpcldnccosccypamqetqcpqhpcpcqcutycastttvab
45 5292 0 1 1 1 0 1 0 0 0 1.00 rucavc~~o~~tdqagsqcpcldnccosccypamq~~r~~tqcpqhpcpcqcutycastttvab
46 5302 0 1 1 1 0 1 0 0 0 1.00 rucavc~~o~~tdqagsqcpcldnccoscc~~d~~pamq~~r~~tqcpqhpcpcqcutycastttvab
47 5323 0 1 1 1 0 1 0 0 0 0.99 ruzavc~~o~~tdqagsqcpcldnccosccdpamq~~r~~tqcpqhpcpcqcutycastttvab
48 5337 0 1 1 1 0 1 0 0 0 0.99 ruzavc~~o~~tdqagsqcpcldnccosccdpamq~~r~~tqcpqh~~g~~ppc~~q~~cutycastttvab
49 5481 0 1 1 1 0 1 0 0 0 **1.02** ruzavc~~o~~tdqagsqcpcldnccosccdpamq~~r~~tqcpqh~~g~~ppc~~q~~cutycastttvab
50 6067 0 1 1 1 0 1 0 0 0 1.00 ruzavc~~o~~tiqagsqcpcldnccosccdpamq~~r~~tqcpqh~~g~~ppc~~q~~cutycastttvab
51 6200 0 1 1 1 0 1 0 0 0 1.00 ruzavc~~o~~tizagsqcpcldnccosccdpamq~~r~~tqcpqh~~g~~ppc~~q~~cutycastttvab
52 6520 0 1 1 1 0 1 0 0 0 **1.01** ruzavc~~o~~tizagsqcpcldnccosccdpamq~~b~~tqcpqh~~g~~ppc~~q~~cutycastttvab
53 6765 0 1 1 1 0 1 0 0 0 1.00 rjzavc~~o~~tizagsqcpcldnccosccdpamq~~b~~tqcpqh~~g~~ppc~~q~~cutycastttvab
54 7117 0 1 1 1 0 1 0 0 0 **1.01** rjzavc~~o~~tti~~z~~agsqcpcldnccosccdpamq~~b~~tqcpqh~~g~~ppc~~q~~cutycastttvab
55 7478 0 1 1 1 0 1 0 0 0 1.00 rmzavc~~o~~tti~~z~~agsqcpcldnccosccdpamq~~b~~tqcpqh~~g~~ppc~~q~~cutycastttvab
56 7565 0 1 **0** 1 0 1 1 0 0 **4.00** rmzavc~~o~~tti~~z~~agsqcpcldnccosccdpamq~~b~~tqcpqh~~g~~ppc~~q~~cutycastttvab
57 7977 0 1 0 1 0 1 1 0 0 **1.01** rmzavc~~o~~tti~~z~~agsqcpcldnccos~~z~~cdpamq~~b~~tqcpqh~~g~~ppc~~q~~cutycastttvab
58 8443 0 1 0 1 0 1 1 0 0 0.99 rmzavc~~o~~tti~~z~~agsqcpcldnccos~~z~~cdpamq~~g~~tqcpqh~~g~~ppc~~q~~cutycastttvab
59 8742 0 1 0 1 0 1 1 0 0 0.99 rmzavc~~o~~tti~~z~~ppqcpcldnccos~~z~~cdpamq~~g~~tqcpqh~~g~~ppc~~q~~cutycastttvab
60 8777 0 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~th~~i~~zppqcpcldnccos~~z~~cdpamq~~g~~tqcp~~g~~ppc~~q~~cutycastttvab
61 9399 **1** 1 0 1 0 1 1 0 0 **1.98** rmzavc~~o~~th~~i~~qppqcpcldnccos~~z~~tdpamq~~g~~tqcp~~g~~ppc~~q~~cutycastttvab
62 9428 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~th~~i~~qppqcpcldnccos~~z~~tdpamq~~g~~tqcp~~g~~ppc~~q~~cutycastttvab
63 9582 1 1 0 1 0 1 1 0 0 0.32 rmzavc~~o~~th~~i~~qppqcpcldnccos~~z~~tdpamq~~g~~tqcp~~g~~pp~~s~~gpc~~q~~cutycastttvab
64 9590 1 1 0 1 0 1 1 0 0 **3.19** rmzavc~~o~~th~~i~~qppqcpcl~~t~~ncos~~z~~tdpamq~~g~~tqcp~~g~~pp~~s~~gpc~~q~~cutycastttvab
65 9823 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~te~~h~~iqppqcpcl~~t~~ncos~~z~~tdpamq~~g~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
66 9993 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~te~~h~~iqppqcpcl~~t~~ncor~~z~~tdpamq~~g~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
67 11029 1 1 0 1 0 1 1 0 0 **1.01** rmzavc~~o~~te~~h~~iqppqcpcl~~t~~ncor~~z~~tdpamq~~g~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
68 11584 1 1 0 1 0 1 1 0 0 **1.01** rmzavc~~o~~te~~h~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~g~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
69 12028 1 1 0 1 0 1 1 0 0 **1.01** rmzavc~~o~~te~~h~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~g~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
70 12671 1 1 0 1 0 1 1 0 0 **1.01** rmzavc~~o~~te~~h~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~b~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
71 12853 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~te~~h~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~b~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
72 12947 1 1 0 1 0 1 1 0 0 0.99 rmzavc~~o~~te~~h~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~z~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
73 13119 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~tn~~b~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~z~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
74 13537 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~z~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
75 13557 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~z~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
76 13869 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~d~~tqcp~~g~~pp~~d~~gpc~~q~~cutycastttvab
77 13952 1 1 0 1 0 1 1 0 0 **1.01** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycastttvab
78 14478 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycastttvab
79 15603 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncor~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycastttvab
80 15769 1 1 0 1 0 1 1 0 0 **1.01** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycastttvab
81 15936 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycastttvab
82 16039 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycastttvab
83 16090 1 1 0 1 0 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycastttvab
84 16672 1 1 0 1 0 1 1 0 0 0.93 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~b~~pc~~q~~cutycast~~_~~vab
85 16769 1 1 0 **0** 1 1 1 0 0 **1.98** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
86 16786 1 1 0 0 1 1 1 0 0 0.99 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
87 16900 1 **0** 0 1 1 1 1 0 0 **2.00** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
88 16979 1 0 0 1 1 1 1 0 0 **1.08** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
89 17008 1 0 0 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
90 17145 1 0 0 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
91 17370 1 0 0 1 1 1 1 0 0 **1.01** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
92 19260 1 0 0 1 1 1 1 0 0 **1.01** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
93 19828 1 0 0 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
94 20740 1 0 0 1 1 1 1 0 0 0.99 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
95 20804 1 0 0 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
96 21032 1 **1** 0 1 1 1 1 0 0 **2.00** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
97 21509 1 1 0 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
98 22229 1 1 0 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
99 22240 1 1 0 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutycastttvab
100 22404 1 1 1 1 1 1 1 0 0 **2.90** rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutyc~~u~~astttvab
101 22412 1 1 1 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutyc~~u~~astttva_
102 22487 1 1 1 1 1 1 1 0 0 1.00 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutyc~~u~~astttva
103 22586 1 1 1 1 1 1 1 0 0 0.99 rmzavc~~o~~ztn~~b~~i~~q~~ptqppcpcl~~t~~ncog~~z~~tdpamq~~d~~tqcp~~g~~pp~~i~~fpc~~q~~cutyc~~u~~astttva

104	22629	1	1	1	1	1	1	1	0	0	1.05	rmzavcgmcicqptppqcpctletncogctbnamqdtqcptipqfpqqcutycuastttva
105	22864	1	1	1	1	1	1	1	0	0	1.00	rmzavcgmcicqptppqcpctletncogctbkamqdtqcptipqfpqqcutycuastttva
106	22886	1	1	1	1	1	1	1	0	0	0.99	rmzavcgmcicqptppqcpctletncogc_bkamqdtqcptipqfpqqcutycuastttva
107	23002	1	1	1	1	1	1	1	0	0	1.02	rmzavcgmcicqptppqcpctletncogcbkamqdtqcptipqfpqqcutycuastttva
108	25881	1	1	1	1	1	1	1	0	0	1.00	rmzavcgmcicqptppqcpctletncogcbkamqdtqcptipqfpqqcutycuastttva
109	26343	1	1	1	1	1	1	1	0	0	1.01	rmzavcgmcicqptppqcpctletncogcbeamqdtqcptipqfpqqcutycuastttva
110	27437	1	0	1	1	1	1	1	0	0	0.49	rmzavcgmcicqptppqcpctletncogcbeamqdtqcptipqfpqqcutycuastttva
111	27450	1	0	0	1	1	1	1	0	1	8.00	rmzavcgmcicqptppqcpctletncogcbeamqdtqcptipqfpqqcutycuastttva

From the Supplementary Information for an article by Lenski, Ofria, Pennock & Adami on “The Evolutionary Origin of Complex Features” that appeared in *Nature* (8 May 2003), vol 423, pp 139-144.