

MAIZE GENETICS COOPERATION NEWS LETTER

Appendix to volume 36
Symbol index to volumes 12 through 35

JULY 1, 1962

The data presented in the Newsletters are not to be used in
publications without the consent of the authors.

**Prepared by
E. H. COE, Jr.**

**Field Crops Department, University of Missouri
and U.S. Department of Agriculture, Columbia, Missouri**



This index was prepared over a period of 4 years with the intention that it would provide organized access to the wealth of unpublished material in the Maize Newsletters and that through it some enthusiasm for summarization of linkage and other information might be generated. The usefulness of maize as a biological tool depends entirely on the availability of these laboriously-accumulated data.

This index begins with volume 12, in which there is an index (prepared by John Shafer) to linkage information. Consequently the only references for volume 12 are to the index there and refer only to linkage notes for volumes 1 through 12. The remainder of the index covers all references from volume 13 (1939) through 35 (1961).

Entries with "none" signify that these symbols, though listed in Emerson, Beadle, and Fraser, have had no citation in the Newsletter. Inbred lines, chromosomal aberrations, cytological structures, and most informal symbols were ignored, as were the Coop stock lists except where new information was stated or implied. The categories into which references were subdivided when it appeared desirable were distinguished as follows:

Action	Biochemical and morphological analyses, and interactions with other factors
Description	Visible effects, classification, and allelism
Distribution	Occurrence in standard lines or exotic races, and geographic dispersion
Linkage	Associations, locations to chromosome, recombination percentages, and allelism tests
Mutability	High rate of mutation
Mutation	Occurrence, frequency, and induction of changes in function, including gross deficiencies
Structure	Compoundness, partitioning, and fine-level recombination analysis

The arrangement and organization of the symbols should be evident on examination. Corrections and complaints will be welcomed for the 1981 revision.

The cooperative secretarial assistance of Mrs. D. F. Millikan and Mrs. J. F. Heisinger is acknowledged with appreciation.

E. H. Coe, Jr.

A locus (see also beta, and "P(of A)")

Action 15:6,45,46 16:26,31,33 17:21 18:3,19 21:9,12,26,27,28,3
 23:54 24: 46,51 25:6,29,38 29:6,7,12,23 30:111,134 31:138
 32:13,127,138 35:95

Description 14:7,26 15:6,44,45,46 16:25,26,31 17:20,21
 18:19,20,22,23 19:14 21:3,9,26,27,28 22:10 23:54,66 24:49,51
 25:6,7,28,29,38 26:45 27:3,57,60,61,68 28:11,65
 29:6,7,12,13,23,57,59,61 30:47,67,68,82,101,102,111,112,113,114,115,1
 31:31,56,138,141 32:88,103,125,126,127,138
 33:41,42,43,44,45,59,60,61,108,110 34:44,69 35:47,48,49,77,96

Distribution 21:26,27 29:57,61 30:68,134 31:56 35:35

Linkage 12:21 13:8,9 14:8,24 16:26 17:3,7,21 19:7,29 20:35
 21:2,20 22:9,10,20,22 23:54,58 24:50 25:28 27:38,61 28:56,6
 29:48 30:11,40,43,47,52,68,104,113,114,115 31:74,77,83,143
 32:66,72,99,127 33:42,44,51,57,63,80 34:45,51,56 35:47,49,67

Mutability 14:6 15:5,6 16:26 18:3 21:3,27,28 24:49,52 25:3
 26:45 27:61,68 28:12,65 29:12,13,59,60,61 30:12,67,82,101,111,1
 31:13,31,141 32:88,125 33:45,59,60,61,108 34:69 35:47,77

Mutation 15:6,36,44 17:20 18:21,24 23:54,63 25:28 26:28,35
 27:57,61 28:12 29:59,61 30:47,67,101,102,111,114,116
 32:88,125,126,127,128 33:33,42,44,45 35:47,48

Structure 23:54 24:52 25:28,29 29:12,57,61 30:68,101,112,113,1
 31:141 32:88,125,127 33:41,44,108 34:44,69 35:47,48

alpha 23:56 29:57 30:68,101,112,113 31:141 32:99,127,128
 33:42,44,45,80 34:44 35:47

$\frac{1}{a sh_2}, \frac{2}{a sh_2}$ 32:125,127

a* 33:45

A¹,A²,a⁴,A⁴,a⁵ 30:115,116 32:125,126

a^{a1},a^{b1},a^{b2} 32:125,126

A^b 15:6,44,45 16:25,31 17:20 18:21 21:26 23:54 24:52
 25:28,29 29:57,61 30:67,68,101,112,115 31:56 34:44 35:35

A^{b-c},A^{b-ch} 17:21

A^b:Ec 33:44 35:47

A locus (continued)

A ^b -m	17:21						
A ^b :P	29:57	30:68	33:41,42,44	35:47			
A ^b -w	17:21						
A ^{br}	17:21	18:19	25:38				
a ^{db}	35:49						
a ^{dl}	18:24	21:28					
A ^d	23:54	24:52	25:28,29	32:103			
A ^d -2	24:52						
A ^d -6	30:115						
A ^d -31,A ^d -41	25:6						
A ^d -st	30:115						
A:D2	29:59,60	30:101					
A ⁺ D ₄	25:6						
a:Ec	35:48						
A ^{lt}	15:46	16:26,31	17:21	18:20	25:38	29:61	
a ^m	25:38	27:60,68	28:65	30:82	32:88,99	33:60	34:69
A ^m	21:3						
a ^m -1,a ^m -1:Cache,a ^m -1:D5	26:45	29:12	30:12	31:31,141	33:110		
a ^m -2,a ^m -3,a ^m -4	29:13	31:141					
a ^m (dense),a ^m (fine)	35:77						
a ^m I	33:59,61						
a ^m (nr),a ^m (r)	35:77						
a ^P	14:7	15:6,44,45	16:25,31	17:20	18:19	21:9,12,26,27	
	24:49	25:7	30:111,115,116	31:56	32:126		
a-P,A-P	21:26,28						

A locus (continued)

$a^{P2}, a^{P3}, a^{P4}, a^{P5}$	30:115,116	32:125,126				
a^{PL14}	30:113,115					
a^{Pm}	29:61	30:111,113,114,115,117	32:125,127	33:108		
a^{P-F}	21:28					
A:Provo	30:102					
A^r	29:61	32:126				
a^{rb}	35:49					
A^{rb}	18:19	25:38				
a^S	27:61	31:141	32:88			
a^{u3}, a^{u15}, a^{u18}	15:46	16:26				
A^w	17:21	18:20				
$a^{X1}(a-x_1)$	15:45	18:22	25:28	30:47	32:125,127	33:43
$a^{X2}(a-x_2)$	22:10					
a^{X4}, a^{X6}	15:45	16:25,26				
a_2						
Action	16:31	21:9,12	29:6,7	31:138	35:95	
Description	16:31	21:9	29:6,7	31:138	34:65,66	35:96
Linkage	12:21 30:10	14:10 32:77	15:26 33:63	19:12 34:65	20:16 35:65	25:30 28:58,59
Mutation	34:65	35:65				
Structure	34:65	35:65				
$a_2^{Bl Mex}$	34:65	35:65				
a_2^{St}	34:65	35:65				
a_3	12:21	29:54				

ac (coleoptile) 34:25,26

Ac (Activator)

Action 28:77 29:9,59 30:17 33:128 34:99

Description 28:77 29:9,10,11,12,59 30:15,17 31:88,111,140,141
32:38,88,97 33:128 34:99

Distribution 32:26

Linkage 29:10,12 30:16,17

Mutability 29:9,10,11,12

ad₁ 12:21 15:11

ad₂ 12:21

ad₃ 12:21

ad_L 13:12

ad_t 13:12

ae

Action 26:5 31:140 34:110,111

Description 26:5 31:140 34:110

Linkage 34:109

Structure 34:110

Mutation 34:110

ag 12:21 22:27,28,29

al

Action 20:25

Description 13:1 17:49 20:23 21:47

Linkage 12:21 17:49 20:23,24 21:47

Am (amarello endosperm) 22:57 33:49 34:48

am (ameiotic) 33:49 34:48

an₁ (see also an₆₉₂₃)

Action	15:15	16:14	30:10,12	31:17	32:100	33:7
Description	16:14	29:4	30:10,12	31:17,140	32:100	33:7
Linkage	12:21 31:29,140	14:16,18	15:10,14,15,16	16:14	29:4	30:12,100

an₂ 12:22 31:29 34:134

an₆₉₂₃ (see also an₁ and bz₂)

Action	32:100
Description	29:4 30:101 31:140 32:100
Linkage	29:4 30:101 31:140
Mutability	31:140
Structure	31:140

an_{7281,7752,8083,8379,8704} 31:29

ar 12:21 30:164 32:100 33:78

ar_a 12:21

as

Action	34:49,87,89
Description	23:56 32:73,79 33:54 34:49,87,89
Linkage	12:21 14:2 15:11 26:42

at 14:18 15:19,20 31:151 33:131

au_{1,au₂} 12:39 32:100,101

beta	Description	23:56 34:44	29:57	30:68,101,112	32:127	33:42,44	
	Linkage	30:113	32:127	33:42,44	35:49		
	Mutability	30:101,112	32:128				
	Mutation	32:128	33:43,44	35:47			
	beta ^m	30:101					
	beta ₀	33:42,44					
B	Action	16:29,31 25:6	17:6 34:91	18:19	19:42	21:7,19,39	24:67
	Description	14:11 33:77	16:29,31 34:90,91	18:18,19,20	19:42	23:5	25:6
	Linkage	12:22 20:34	14:3,4,11 21:12,35	15:4 23:5	16:4,33 26:10	18:10 30:10	19:6,9,10,12 32:54,80
	Mutability	13:11	14:11	23:5	34:91		
	Mutation	14:4	18:20	23:30	33:77	34:90,91	
	B'	33:77	34:90,91				
	B ^b	34:91					
	B ^v	23:5	34:91				
	B ^w	16:29	18:18,20				
ba		12:22					
ba ₂		12:22	15:4	18:16			
ba _s		20:16					
bd		12:22 34:48	14:4,25	17:2	18:16	20:34	26:41
						31:67	32:48
be		12:22					

Bf	Action	24:12	28:22	32:28	33:6				
	Description	24:12	27:5	28:22	32:28	33:6,79			
	Linkage	26:12	27:5	28:17	32:100	33:6,78			
Bf ₂		27:5,6	33:5,6						
Bh	Action	29:23	30:31	32:104					
	Description	19:14	21:3	29:23	30:31	31:62	32:43,104		
		33:38	34:35						
	Linkage	12:22	19:14	22:9	29:23	30:31	31:60	32:44	
		33:38	34:35,36						
Bh chr. 2		34:36	31:62						
Bh chr. 4		33:38	34:35,36						
Bh chr. 9		32:44	33:38	34:35,36					
bk		12:22							
bk ₂	Action	43:92							
	Description	14:21	34:92						
	Linkage	13:12	14:21	21:36	29:51	32:100	33:74,78		
bk _x		13:12	14:21						
bl,bl ₂		none							
Bl ₃		24:26,27							
bm	Action	35:126							
	Description	35:126							
	Linkage	12:22	14:5	15:26	17:4	19:6,7,12	30:34	21:2	
		27:9	32:54	33:63	34:65,85,110				
bm ₂	Action	35:126							
	Description	35:126							
	Linkage	12:22	14:16,18,25,28	15:11,14,15,16,18,22					
		19:5,6,29	20:15,34	21:20	22:20	25:5	26:22		
		29:43	33:63	35:87					

bm₃ Description 19:30
 Linkage 12:22 14:25 15:19,21 19:30

bm₄ Description 21:36
 Linkage 24:58 28:58 29:51 31:77 32:100 33:74,78

Bm-b 15:48

Bn Action 20:24 21:47
 Description 17:50 20:24 21:47 32:48
 Distribution 35:35
 Linkage 12:22 14:4 17:50 20:24

bn₂ 12:22 17:50

bp 12:22 19:8 24:33,34 29:50

br Description 29:51 33:94 35:87
 Linkage 12:22 14:2,16,18,25 15:10,14,15,16,33 17:9
 19:5,6,7,8 20:9,34 25:5 26:41 33:63

br₂ 25:31 28:54 33:3

br₃ 33:3

bs 19:28,29

bt Action 17:47 24:10,38 26:5 27:10 34:99
 Description 17:47 18:3 24:10,38 25:40 26:40,42 27:10
 28:58 31:140 34:99,137 35:67
 Linkage 12:22,23 14:5,10 15:26 19:12 25:30,33 26:42
 27:4 28:58,60 30:49 31:19,115 32:77,92
 33:63 34:66,99,137 35:65,67
 Mutability 16:6 18:3 21:3
 Mutation 18:3 28:11
 Structure 35:68

bt (continued)

	bt-N1	25:40						
	bt ^m	18:3	21:3					
	bt ^r	17:47						
bt ₂	Action	27:10						
	Description	26:40	27:10	31:152				
	Linkage	26:12	27:10	31:152				
	Mutation	28:12	31:13					
bt ₃		27:4						
bt ₄		12:23	25:33	31:152				
bu		13:5						
bv		12:23	18:16	28:11	34:109			
bv ₂		28:11						
bz	Action	16:3	17:6	19:43	25:6	29:6,7	31:138	35:95
	Description	16:3	17:6	19:43	23:66	25:6	28:63	
					29:6,7,10	30:15,114	31:138	34:112
								35:95
	Linkage	16:3	17:7	19:13,43	29:9,10	30:19	31:36,42,76	
					32:69	33:18,80	34:84,112	35:123,125
	Mutability		29:9,10	30:15,17,19				
	Mutation	19:43	29:9	30:18,114,117	32:20			
	Structure	29:10	30:17					
	bz ^m	29:10						
bz ₂	Action	28:63	29:59	32:103	25:96,97			
	Description	28:63	29:59	31:140	32:100,103	35:96,97		
	Linkage	28:64	30:100	31:140	35:92,94			
	Mutability	28:63	29:59	31:140				
	Mutation	35:92						
	bz ₂ ^m	28:63,64	29:59	31:140	35:92,94			

C (see also I)

Action 17:47 21:3,50 22:9 30:30,106,134 31:138
32:103,104 35:95,97

Description 17:41,47 19:14 21:50 22:39 29:23
30:30,96,106,134 31:63,136,138 32:103,114,144
33:33,37 35:96

Distribution 17:41 19:32 21:28 27:22 30:134 32:45
35:95

Linkage 12:23 14:5 17:7,41 18:24 19:6,13 21:2,50
24:56 25:3 26:11 27:7 28:10 30:18,51,96
31:42,91,136,162 32:31,54,75,82,101,103
33:5,54,73 34:35,56,58,59,67,84,88 35:61,122

Mutability 19:14 21:3 22:9 29:9,23 30:30,106 31:60,62
32:38,43,114 33:37 34:35

Mutation 13:3 14:10 23:29 29:9,75 30:18,97 31:50,137
32:20,104,144 33:73,80

Structure 30:96 31:136 32:103,104

$C^I (=C^I=I)$ 17:41,47 21:45 30:96,97,134 31:136,137,138
32:103,104,144 33:73,80 35:95,97

c^m 32:114

c_2 32:102 33:80 34:91

cb 12:23

Ce 31:111

Ce_2 31:111

Cg Action 23:7 24:2,63 25:12 26:52 27:75 33:49 34:38

Description 21:6 23:7 24:2,63 25:12 26:52 27:75
29:32 32:48 33:49,117 34:36

Linkage 26:51

Mutation 32:48

Ch 12:23 15:4 19:6,11 21:1,2 22:36 33:63

a1 Action 29:8 34:24,69 35:75,116
 Description 29:8 33:62 34:24,70 35:75
 Linkage 29:8 30:11 33:62 34:70
 Structure 34:71

Cl₂ 29:8

Cl₃ 29:8 34:24 35:116

Co (adherent) 12:23

Co (chocolate pollen) 24:67 30:140 29:33

Co_t (corrugated leaf) 13:12

or 12:23 13:2 14:24 16:21 29:43

or₂ 12:23 32:100,101

or₃ none

oz none

D (Dense) 33:61

d Action 28:50 29:44 30:10,12 31:17,18 32:6 33:7
 Description 25:2 28:12,50 29:4,44 30:10,12 31:17,18
 32:6 33:7 34:134
 Linkage 12:23 13:7 14:25 15:29 16:21 19:10 20:34
 23:58 26:51 27:64 29:4,36 30:11,12,163 31:29
 33:63 34:134

d₂ 12:23 30:10 31:17 32:6 33:7

d₃ Action 31:17 32:6,102 33:7
 Description 30:10 31:17 32:6,102 33:7
 Linkage 12:23 31:29 32:101 33:78

d₄ none

d ₅	12:23	30:10	32:6	33:7
d ₆	12:23			
d ₇	12:23,24	15:7,32	16:3	
d ₄₉₆₃	28:50	30:9,10,12	31:17	
d ₅₂₃₂	30:10,12	31:17		
d ₅₅₈₈	31:29			
d ₆₀₁₆	29:45			
d ₇₂₈₁	30:12			
d ₇₃₃₅	27:5			
d ₈₀₀₄	27:5	31:29		
d ₈₀₄₃	30:9	31:17		
d ₈₀₅₄	27:5	31:29		
d ₈₂₀₁	27:5	29:44	30:12	31:17,29
d _{a,db}	12:23	27:41		
d _{Dom.}	30:12	31:17		
d _H	12:23			
d _{Hahn 6}	25:31			
d _{Hy}	24:53	25:31		
d _{Hy2}	28:53			
d ₀₇	25:32	28:53		
d _{Oakes}	15:29	16:21	23:49	24:53 25:31 28:54
d _{p51}	27:5			
d _{R4}	25:31	28:54		
d _{s-3}	18:17	33:74		

d_t	13:12				
d_{W8}	25:31	28:53,55			
d_{W28}	28:54				
da	12:24				
Da_2	12:24				
de	12:24				
de_2 through de_{14}	none				
de_{15}, de_{16}	12:24				
de_{17}	21:51				
de_f	12:24				
de_{pl}	none				
de^t series	Description	30:32,33,34,35 33:67,68	31:39 34:75	32:11,31,37 35:36,79	
	Distribution	32:37			
	Linkage	30:34,35 34:75	31:39,60 35:79	32:11,31	33:38,67
	Mutability	30:33,35	31:39	32:31	33:68 34:75
	Mutation	31:39	33:68		
	Structure	32:32			
Df (diffuse)	32:140	33:129			
di	14:12				
$d1$	12:24				
dm	none				
Dominant Dwarf	30:12	31:17			
$dp-N1$	25:39				

Ds Action 29:9 30:17,114 31:139 33:128 34:99 35:92
 Description 28:77 29:9,11,12,59 30:16,17,114 31:129,140
 32:97 33:128 34:99,119 35:92
 Linkage 29:9,12 30:16,17
 Dt Action 14:6 25:6 18:3 27:61,68 28:65 29:59,60,61
 30:67,102
 Description 14:6,8 15:6,45,47 16:27 18:3 19:14
 21:3,27 27:61,68 29:59 30:67,102 31:141
 32:88,127 33:44
 Distribution 21:28 26:46 27:68
 Linkage 12:24 14:5 15:4 16:2 28:64
 Mutability 26:46
 Mutation 25:39 26:45
 Dt-2 26:46
 Dt^A 18:3
 Dt₂ 26:46 27:67,68 28:64 29:60
 Dt₃ 28:64 29:60
 du Action 13:8 23:39,45 24:38 25:27 26:5,40 31:15,119
 34:99,111
 Description 23:39,45 25:27 31:14,119 34:99,111
 Linkage 12:24 23:46
 el 30:39 32:73 33:58 35:44
 En Action 27:59 30:82 32:87 33:61 34:68 35:77
 Description 27:59 30:82 32:87 33:59,61 34:68 35:77
 Linkage 27:59 32:87
 Mutability 35:77
 En^{mod.} 35:77

et	Action	30:44	31:75	35:67				
	Description	14:26	30:44	31:75	35:67			
	Linkage	14:26	16:26	17:7,21	22:9	23:54	24:50	
		25:28,29	27:61	30:43	31:75	32:67	35:48,67	
	Expanded glumes	32:93	34:85					
f		12:24	14:17,25	15:10,14,15,16	19:5	20:15	21:49	25:33
		26:40,41	35:87					
f ₂ ,f ₃		12:24						
f _t ,f _x		13:12						
f _i		12:24						
f _{i_a}		12:24						
fired		31:104						
f _l	Action	21:45	26:5					
	Description	32:7						
	Distribution	21:45						
	Linkage	12:24	16:4	18:17	28:59	31:62,73,103	32:80	
		34:36						
f _{l₂}		15:29	25:33	32:7	35:135			
f _n		22:37,38	23:43,44					
f _r		12:24						
f _{r₂}		12:24						
FR	(see Rf)							
f _s	none							
Fungoid	8057	27:5						
f _z		31:29						

g	Description	22:42				
	Linkage	12:25	15:7	19:6,7,10,13,29	20:34	21:2,19,20
		22:20,22,38,41	23:44	24:40	26:40,42	27:66
		28:10,13	29:43,54,63	30:86	31:80,88,108,162	
		32:54,80	33:5,41,122	34:20		
E_2	12:24	14:25	15:19	16:34		
E_3	12:24	14:2				
E_4	12:24	13:8,11	14:15,22			
E_{sh}	13:9	14:15				
g_a (see also $g_{a_{chr.4}}$)						
	Action	28:38,41,60	32:92,122			
	Description	17:10,16	18:8	21:4	28:36,38,40,60	31:115
		32:122	34:36,114	35:34,44,73		
	Distribution	27:22	28:37	31:115	34:114	35:35,44
	Linkage	12:25	21:4	27:4	28:38,60	31:115
					34:36	
	Mutability	34:36				
	G_a^S	21:4	28:36,37,38,40	31:115	32:122	34:114
					35:73	
g_{a_2} (see also $g_{a_{chr.5}}$)	12:25	31:115				
g_{a_4} (see also $g_{a_{chr.1}}$)	18:8	20:4	23:33,34			
g_{a_8} (see also $g_{a_{chr.9}}$)	25:30	31:40	32:11			
$g_{a_{chr.1}}$ (see also g_{a_4})	17:8	18:8	28:60			
$g_{a_{chr.2}}$	23:59	28:60				
$g_{a_{chr.3}}$	17:7	18:1	22:9	28:60	31:116	
$g_{a_{chr.4}}$ (see also g_a)	28:60	31:41	32:34,92	33:34	34:36	
$g_{a_{chr.5}}$ (see also g_{a_2})	23:59	26:42	28:60	31:19,115	32:92	
$g_{a_{chr.6}}$	33:66					
$g_{a_{chr.7}}$	31:41					

$g^a_{chr.9}$ (see also g^a_8) 26:34 31:40,116 32:11
 g_0 none
 g_e through g_{e15} none
 g_1 31:108
 g_1 Action 34:83
 Description 17:38 25:2 34:83
 Linkage 12:25 14:4,14 15:19 16:15,28 17:2 18:11,16
 19:6,12,29 20:15,34 21:2,20 22:41,48 25:2
 26:41 27:10 29:4,5 30:34 31:41 32:48,54
 33:63 35:75
 g_{1_2} Action 25:2 34:83
 Description 17:38 25:2 34:83
 Linkage 12:25 14:3,5,11 15:4 16:4 18:10 21:1,2,35,47
 23:5,57,61 25:2 26:10 27:7 28:60 29:5
 31:73,91,104 32:54,80 33:54 34:88,90 35:134,135
 g_{1_3} Action 34:83
 Description 17:38 25:2 27:41 34:83
 Distribution 27:41
 Linkage 12:25 14:28 19:7 21:2 25:2 28:14 29:5,24
 30:9,34,163 32:54,93 34:36,56,58,59 35:30
 g_{1_4} Description 16:21 17:38 25:2
 Linkage 12:25 13:1 14:26 15:21 17:38 18:15 24:57
 25:2 29:5 30:9 32:138
 g_{1_5} Description 17:38 25:2 29:5
 Linkage 23:59 25:2 29:5
 g_{1_6} Description 17:38 19:30 25:2 29:5
 Linkage 12:25 18:16,17 25:2 27:58 28:56 29:5,48
 30:43 31:74,77,104 32:67 33:57

g^1_7	Description	25:2	29:5				
	Linkage	12:25	25:2	26:12	29:5	20:9,77	
g^1_8	Description	17:38	25:2	29:5	30:9		
	Linkage	12:25	23:59	25:2,4	29:5	30:9,10	33:63
g^1_9	Description	17:38	25:2	29:5	30:9		
	Linkage	18:17	25:2	30:9			
g^1_{10}	Description	16:21	17:38	25:2	29:5	30:9	
	Linkage	12:26	17:38	24:57	25:2	26:12	29:5
		30:9	32:102				
g^1_{11}	Description	29:5					
	Linkage	12:26	18:17	22:43	28:59	31:104	
g^1_{13}	29:6						
g^1_{14}	29:6						
g^1_{15}	Description	29:5					
	Linkage	29:6	31:5,105	32:100	33:78	35:86,122	
g^1_{16}	30:9						
g^1_{17}	Description	25:30	28:58				
	Linkage	25:30	28:58	33:63	34:65	35:65	
g^1_p, g^1_o, g^1_d	12:25	27:41					
$g^1(g)$	29:6						
g^1_H	29:6	34:83					
g^1_{s-1}	18:17						
g^1_{s-2}	19:30						
g^1_{s-3}	18:17	30:9					
g^1_t	13:12						

I (Cont.) Mutation 29:9 30:97 31:137 32:20,104,144 33:73,80
 Structure 30:96 31:136 32:103,104

I (of pg) 27:60 34:68

id (indeterminate growth) 23:8 24:21 31:94 34:2

Id (inhibitor of Dt) 28:65

ij Action 34:15,17 35:66
 Description 13:11,12 14:4 24:49 27:66 28:28 32:108,120
 34:15,17 35:66
 Linkage 12:21,26 13:12 14:4,25 15:19 16:15,28 17:2
 18:16 22:41 32:48
 Mutation 35:66

in Action 25:34 29:7 31:138 34:91 35:95
 Description 23:66 25:34 29:7 31:138 32:103 34:91
 35:96,97
 Linkage 12:26 14:14 16:15

it 12:26 17:50

j Action 31:80
 Description 27:66 31:80
 Linkage 12:26 13:2,3 14:25 19:6,7,28,29 20:35 22:22
 29:43 30:163 31:80 33:71

j₂ 12:26,27

j_x 23:44

Kn Description 31:152
 Linkage 12:27 14:16 15:11,16 18:9 30:11 33:63

l 12:27 24:49
 l^m 24:50 33:64
 l₂ 12:27
 l₃ none
 l₄ through l₉ 12:27
 l_{a,b,c,d,e} 27:41
 l_x 19:21
 l_a Action 26:24 32:131 34:34
 Description 26:24 32:131 34:34
 Linkage 12:27 26:41 30:163 32:93
 l_{a_t} 13:12
 l_e 12:27
 l_g Action 17:7 23:57
 Description 17:7 23:57 25:3
 Linkage 12:27 14:3,5 15:4 16:4,33 17:49 18:10,16
 19:29 20:23 21:1,20,47 22:20,22 23:57,61
 26:10 27:7,38 29:43 30:34 31:73,91,104
 32:54 33:54 34:56,58,59,88 35:134,135
 Mutation 23:30
 l_{g₂} 12:27 13:7 14:8,24,26 17:3,7 19:7,10 20:35 22:9
 23:54,48 24:50 26:41,51 27:61,64 28:56 29:36,48
 30:11,40,43,163 31:74,77 32:67 33:57,63 34:56
 l_{g₃} 13:7 14:24
 l_i 12:27 24:67 31:108
 l_o 12:27 13:4
 l_{o₂} 12:27

lp 12:27
 lw Action 29:9 35:75,116
 Description 29:8 33:62 34:24 35:75
 Linkage 29:8 30:11 33:62
 lw₂ Action 34:24 35:75,116
 Description 29:8 33:62 34:24 35:75
 Linkage 29:8 30:11 32:90 33:62
 lw₃ 29:8,9 35:116
 lw₄ 29:8,9
 m, m₂ none
 M (of A) 30:113,114,117,118 32:127
 M (of Bz₂) 28:63 29:59 31:140 35:92
 M (of Kys sterile) 29:66
 M (of R) 33:82
 Mst (of Rst) 33:122
 mc 12:27
 Md 28:65
 me none
 mg 14:15
 mi (midget dwarf) 20:16 22:7 31:17,104
 mi_{sh} 13:9
 midget₈₀₄₃ see d₈₀₄₃
 mn 24:10

Mp (see also tr-Mp)

Action	25:47	26:57	27:75	28:77	29:75	30:136
	31:144	33:128	34:120,128,130	35:20		
Description	25:47	26:55,57	27:75	28:77	29:59,77,78	
	30:136,138	31:129,144	32:143	33:128		
	34:120,128,129	35:77,120,150				
Linkage	26:55	27:75	28:77	29:77,78	30:138	31:144
	34:128	35:120,150				
Mutation	25:47	26:57	28:77	29:78	30:138	31:130,144
	32:143	34:120,128,129	35:120,150			
Mp'	31:129					
Mp ^a	34:120					
Mp ₂	25:47	26:55				
mr	12:27("Mi")	22:41				
ms	Action	28:20	33:14	35:23		
	Description	28:20	33:14	35:23		
	Linkage	12:28	18:16	19:30	20:15	21:35
		28:20	30:163	33:14	35:23	24:41
	Mutation	31:130				
ms ₂	12:28	32:100	33:78			
ms ₃	12:28					
ms ₄	none					
ms ₅	14:18	15:19				
ms ₆	15:19					
ms ₇	none					
ms ₈	12:28	13:3	19:6,7,12	20:35	33:71	
ms ₉	15:19					

ms₁₀ 15:19
 ms₁₁,ms₁₂ none
 ms₁₃ 15:19
 ms₁₄ 15:19
 ms₁₅,ms₁₆ none
 ms₁₇ 12:28 14:18 17:9 20:8
 ms₁₈ 12:28
 ms₁₉ none
 ms₂₀ 12:28
 Ms₂₁ 28:51 30:22,23,51,106
 ms₄₃ 14:18
 ms_{A28},ms_{A29} 32:108,109
 ms_{KYS} 24:50 29:51 31:81,96 32:79
 ms-si 33:102,131 34:138
 ms_x 23:44
 Mt 12:28 13:4 15:9

 na Action 30:12 31:17
 Description 30:12 31:17
 Linkage 12:28 13:8 20:35 21:2 29:53 30:12 32:70
 na₂ Action 31:17
 Description 31:17
 Linkage 14:18 15:19,32 26:42 30:87 31:103
 no 31:19

necrotic (1917) 26:12
 = nec2 - (1917) necrotic (1917)

neotropic	6697	34:139						
nl		12:28						
nl ₂		12:28	20:16					
nl ₇		18:17						
o		12:28	28:17	32:7				
o ₂		12:28	14:4	16:28	17:2	18:2	21:33	32:7
o ₃		12:28						
O _H		13:5						
O _G		12:28	15:32	22:43	23:44	24:40	26:42	33:2
o _G r		31:108						
Or,Or ₂		22:57	24:47					
Orobanche		28:17	34:138					
oy		12:28						
P	Action	14:8	17:10	19:16	24:33,46	25:47	26:55	28:77,81
		29:75,78	31:129	32:138,140	33:127,129	35:43,85		
	Description	14:8	17:10	19:16	21:45	22:57	24:46,64,67,68	
		25:43,48,50	26:52,53,55	27:73	28:77,81			
		29:75,78	30:136,137,138	31:57,129,144	32:142			
		33:128	34:118,128,129	35:77,84,85,86,150				
	Distribution	26:52	31:56,57	35:35,55				
	Linkage	12:28	13:2	14:2,18,28	15:33,48	16:8	17:3,9,10	
		19:7,8,16	20:5,34	21:21	22:27	23:33	24:23	
		27:25,31,75	29:43,46,78	30:138,139,163	31:145			
		33:63,73	34:128,130	35:120,150				
	Mutability	16:7	21:3	24:65	25:43	26:52,53,55	27:73	
		28:77,81	29:3,77	30:138	31:129	32:142		
		33:73,127	34:118,129,130	35:120,150				

P (continued)

Mutation	24:65	29:3,77	30:136,137	31:130	32:142
	33:73	34:129	35:86,150		
Structure	26:56	27:75	28:77	29:78	30:137,139
	31:129,130,144	32:143	33:128	34:118,129,130	
	35:120,150				
Pb, pbor	24:67,68				
Por, pow, pmm	16:8	17:10	19:16	31:57	
pno	31:57				
po	25:50				
por	24:65				
povov	31:129	34:118			
pow	none				
prg	25:50				
prp	16:8	20:5	24:65	25:43	29:77,78
	30:136,137	31:57,130	32:138,140	33:129	34:128,129,130
					35:150
prrr	24:46				
prw	16:7	31:57			
pv	24:64				
pvr	26:52				
pvv	14:8	15:48	16:8	24:65	25:43,47,48
	26:53,55,56	27:73,75	28:77,81	29:75,77,78	30:137,138,139
	31:57,129,130,144	32:142,143	33:73,127,128		
	34:118,128,129,130	35:77,84,85,86,150			
pvvv	24:46				
pw	25:50				
pwr	16:7,8	17:10	19:16	20:5	24:65
	25:43	30:137,139	31:56		
pwrp, pwrr	24:46				

P (continued)

P ^{WW}	16:8	17:10	19:16	20:5	24:65	25:43	30:137,139
P ^{OW} , P ^{RR} , P ^{WW}	24:68						
P (of A)	30:112,113	32:127,128	33:61				
P (of R)	30:58,59	34:22					
pa (pale aleurone)	27:68	28:63,64					
pa (pollen abortion)	15:33	22:27	26:42				
pas ₄₈₈₉	33:62	34:70	35:75				
pas ₈₅₄₉	33:62	34:70,73					
pas ₈₆₈₆	32:91	33:62	34:70	35:76			
pas-pioneer	34:70						
pb	12:28	13:16	20:15	21:35	27:64	33:90	34:73
pb ₂ , pb ₃	none						
pb ₄	13:9						
pb ₅	14:14	19:31					
pb _x	12:39	13:9,10	14:14				
Pc	none						
Pc ₂	12:29						
Pc ₃ , Pc ₄	none						
pd	13:12	19:28,29					
pg	12:29						
pg ₂ , pg ₃	12:29						
pg ₄ , pg ₅	none						
pg ₆ , pg ₇	12:29						
pg ₈ , pg ₉ , pg ₁₀	none						
pg ₁₁ , pg ₁₂	22:8	25:29	32:79,104	34:66			

PG₈₆₁₆ 31:112
 PG_a 12:29
 pg-N1 25:40
 PG_t 13:12
 pg^m (of Dollinger) 31:110
 pg^m (of Patterson) 31:152
 pg^m (of Peterson) 27:59 30:82 32:87 33:60,61 34:68
 Ph 24:47
 pi, pi₂ none
 pk 12:29
 Pl Action 16:30,31 17:6 21:7,19,39 23:14 24:67 25:6
 Description 16:30,31 21:19 25:6 34:91
 Distribution 35:35
 Linkage 12:29 13:8,9 18:17 19:7,12,14,20 20:15,35
 21:2,19,35 22:8 25:29 26:13 28:13,37 30:31
 31:104 32:54 33:131 34:56,58,59
 pm 12:29 32:70
 Pn 31:64,67 32:38,48
 po 12:29 24:41 26:42 33:131
 Pp 29:26,27 31:67
 pr Action 16:31,33 17:6 25:34 29:7 31:138
 Description 16:31 25:34 29:7,77 31:138 35:97
 Distribution 19:32 27:22 35:35
 Linkage 12:29 14:5 15:26 17:4 18:15,17 19:6,7,12
 20:15,16,34 21:2 23:59 25:4,30 26:21 27:4,9
 30:15,35,49,87 31:5,103 32:54,77 33:63 34:109

pr (continued)

Mutability	31:88				
Mutation	13:3	14:10	15:36	16:6	23:29,63,79
	29:3,24,77		30:99	31:13,39	
Pr ₂	12:29				
ps	29:8,9	30:10	33:62	34:24	
Pt	29:39	32:124	24:38		
Pu, Pu ₂	14:15				
py	12:29	19:21	24:17	28:15	29:37
py ₂	12:29				

R locus (see also "P(of R)" and "S(of R)")

Action	13:2	16:3,7,31	17:20,22	18:19	19:41	22:39
	23:14	25:6	26:39	28:37	30:134	31:116,138,146,149
	32:141	33:39,120,124,127		34:2,123,124,126,127		
	35:66,95,130,139,142,148,149,150					
Description	13:2,3,4	15:4,8,9	16:3,7,31	17:19,22	18:18,19	
	19:41	21:19	22:36,39	23:12,13,14,16		24:6
	25:6	26:22,39	28:11,37	29:2,24	30:31,58,61,134	
	31:88,116,119,138,146,148			32:141,142		
	33:38,39,82,118,122,123,124,125,126,127					
	34:2,20,122,123,124,125,126		35:66,94,96,130,139,140			
	142,147,148,149					
Distribution	19:32	21:28	30:34	32:44	35:35,44	
Linkage	12:29	14:9	15:7	19:6,7,13	21:2,19	22:39
	24:49	25:3	26:12,20,40		28:13,18	29:3,4,54,63
	30:58,86	31:88	32:31,54,80		33:5,41,103,122	
	34:20					
Mutability	24:6	26:39	28:11,37	29:2,24	30:31,63	
	31:60,62,88,116		32:44	33:38,82,121,123		34:36
	35:130,142,145,147					
Mutation	15:44	18:20	23:12	24:6	26:22	29:24,61
	30:58,59,63,65		31:88,146	32:141,142		
	33:120,124,125,127		34:20,123,124,125,126,127			
	35:130,139,143,147,148					

R locus (continued)

Structure	15:44 31:88	23:15 33:123	26:39 34:20,22,122,125,126	29:62	30:58,59,60,63 35:131
$R^i, R^{i'}$	31:146,148	33:120	35:139,148		
R^{ch}	34:2				
r^{ch}	15:4 25:6	17:22 28:11	19:41	22:36	23:12,14 24:6
$r^{ch-lt}, S1, S2, S5, V1, V2, V10, X32$			23:13,14,15,16		
R^g	13:2 31:146	17:22 33:120	18:20 34:20,125,127	19:41	23:14 25:130,139,148
R^g-1 through R^g-10		34:123,125,126	35:139,140		
R^g-14	30:58,60				
r^{gI}_4	35:139,140				
$r^g-S2, S3, SH, V1, V4, X1, X6, X7$			23:13		
R^h	33:82				
$r-m$	26:39,40	28:37			
R^{hb}	29:24	31:146	32:142	34:124	35:148,150
R^{hm}	34:2				
R^{hj}	33:118	34:122,123			
R^p	33:118				
R^r	18:20 33:39,120,125,127 35:130,139,148	29:61,62	30:58,61,63 34:20,123,124,125,126,127	31:146	32:141
r^r	15:44 31:146	16:31 33:125	18:20 34:20,127	29:61 35:66,130,139	30:58 31:146
r^r-8, r^r-25, r^r-27		33:126			
r^rI_3	35:139				

R locus (continued)

R^r :Jana	34:20								
r^rG	13:2								
R^r :st	32:141	33:125							
R^{sc}	32:142	35:130,142,148							
R^{scl}	35:139,142								
R^{st}	31:146	32:142	33:120,121,122,123,124,127						
	34:122,123,126,127	35:130,131,139,143,147,148,150							
R^{stL}	31:146								
$R^{st:nj}$	34:122,123								
ra	12:30	14:4	15:9	16:15	17:2	18:16	19:6,12	20:5,34	
	21:2,49	25:30	26:41	28:10	31:162	34:38			
ra_2	12:30	26:41	30:11	33:63	34:38				
rd	23:49	24:3,53	28:11						
rd_{38-11}	33:3								
re, re_2, re_3, re_4	12:30								
Rf	Action	35:23							
	Description	30:5	33:48,95	34:6,31,122	35:23				
	Distribution	30:84,108	34:82						
	Linkage	30:5,104	33:48	34:32					
Rf_2	Action	34:33	35:23						
	Description	33:95	34:31	35:23					
	Distribution	30:84,108							
	Linkage	34:82							
Rg	Action	24:63	30:48						
	Description	24:63	30:48						
	Linkage	12:30	13:7	14:24	17:3	23:58	24:50		
		27:64	30:43,163	31:74	33:48				

Rg₂? 12:30
 rg chr. 6 31:120 33:102
 rl 13:5
 ro none
 Rp 12:30 22:40 34:47 35:52,54,56
 Rp¹ through Rp⁶ 34:47 35:52,54,56
 rp₂ 22:40,41
 Rpp, Rpp₂ 31:56 32:23 33:25
 rp_x 35:134
 R_s none
 rs₂ none
 rt 12:30 16:21 17:3

S (Scutellum color) 12:30 35:83
 S₂, S₃, S₄, S₅ (Scutellum color) none
 S, S₂ (of cytoplasmic sterility restoration) 28:31
 S (of KYS sterility)

Action	24:50	28:51	29:66	30:23,51,106	31:81	32:79
Description	24:50	28:51	29:51,66	30:22,51,106	31:81	32:79
Distribution	32:79					
Linkage	29:51	30:51	31:73	32:80		

S (of R) 30:58,63 34:22
 S-cl, S-lw₂, S-pr 34:24
 sa, sa₂ 12:30

sb 12:30 13:9 14:15
 sc,sc₂,sc_a,sc_b 12:30
 sd (short day response) 13:12 19:28,29
 Sd (striped) 33:81
 sf 12:31
 sh Action 24:10 26:5 34:99
 Description 24:10 30:114 32:82 34:99
 Linkage 12:31 13:1 14:5,21 15:4 16:2,4 17:7,41
 19:13 21:49,50 24:32,56 25:29,30 26:11
 27:65 29:9 30:16,17,18,19,40,51,96
 31:5,19,36,42,76,105,136 32:44,54,69,75,82,101
 33:38,54,70,78 34:56,58,59,66,67,84,88,114
 35:48,61,63,86,122,127
 Mutability 29:9 30:114 34:99
 Mutation 29:9 30:17,18,99,114 31:12,50 32:20
 sh₂ Action 24:10 27:58 29:46,58 33:44 34:99,111
 Description (18:15) 24:10 25:28 27:4,58 28:59 29:46,58
 33:44,99,111
 Linkage (18:15) (20:16) 25:28 30:68,114 31:143
 32:99,127 33:42,44,80 34:45,51
 Mutability 28:12 31:13
 Mutation 26:35 28:12 29:60 30:114,117 32:125,128
 33:32,108
 sh₃ 28:6 27:4 28:58,59 34:99,137 35:67,68
 sh₄ 30:120 34:99,137
 sh^{fl} 29:45,46 30:118,120
 si 12:31 18:16 22:7 31:120,151 33:102,131
 si₂,si₃ none

sienna₇₇₄₈ 34:139
 sienna₇₇₅₈ 27:5
 sk 12:31 14:3 19:10 20:34 21:1,2 26:10 32:54
 sl 12:31 17:2 18:6
 sm 12:31 13:8 21:2 26:13 28:15 29:39 32:54 34:111
 so 12:31
 sp 12:31 13:4 14:11 15:8,33 34:66
 sp₂ 12:31 15:8,33 30:140
 sp₁ 29:12 30:12,13 31:31 33:110
 sr 12:31 14:2,18 17:3,9 20:9,34 26:41 33:63
 sr₂ 27:66 29:54 30:86 32:80
 st, st^o 12:31 31:139,140 32:113

su locus

Action 13:8,9 15:29 20:21 22:31 23:39,45
 24:8,10,11,38,42 25:7,27,42 26:5,6,14,23,40
 27:58 28:71 29:38,58 30:33 31:15 32:103
 33:44 34:99,111 35:112
 Description 15:29 19:33 22:31 23:39,45 24:8,10,11
 25:7,27,42 26:6,14,23,29 27:10,58 28:60,71
 29:38,58 31:14,40 32:103,136 34:99,111
 35:30,112
 Distribution 19:33 28:71 32:26,136
 Linkage 12:31 13:5 14:3,11,28 15:22 16:27 17:4
 18:15 19:4,6,7,11,28,29,30 20:24,34 21:2,4,20,49
 22:20,21,22 25:8,32,33 26:3 27:10,25,30,58
 28:10,13,38,60,71 29:24,43 30:10,31,34,163
 31:29,41,60,115,162 32:34,53,93,108,138 33:34,64
 34:36,56,58,59,61,175 35:30,79,83
 Mutability 31:121
 Mutation 13:3 14:10 15:30,36 23:29,63 26:28 29:24
 30:99 31:12,39,121 32:137 33:32

su (continued)

su ^{am}	13:8	15:29,30	23:39,45	25:27	26:5,40		
	34:99,111						
su ₂	Action	13:8,9	23:40	25:27	26:5,40	31:15,119	34:111
	Description	15:29	16:21	20:15	23:40	25:27	26:40
		31:14,119	34:111				
	Linkage	12:31	20:15	23:40,45	29:37	31:111,120	
		33:92,103					
su ₃	12:31						
su _x	20:15,21	22:31	23:39,40,45	24:42			
sy	12:31						
ta (tan cob)	32:138						
ta (target spot)	28:29						
tb	35:87						
th	12:31						
tiny ₈₄₄₆	30:9,10,12						
tn	12:31	20:16					
Tp	Action	26:52	29:27	34:38			
	Description	21:6	29:27	32:120	33:41,117	34:38	
	Linkage	12:31	14:15	33:41			
	Mutation	21:6	33:117				
Tp ₂	22:41	33:118					
tr (two-ranked ear)	13:12	19:28,29					
tr-Mp	28:78	31:144	33:128	34:128,130	35:120		
ts	Description	22:7					
	Linkage	12:35	14:3	16:4	18:16	19:7,9	21:1,2
		30:11	32:54,80	33:63			

ts₂ Description 22:7
Linkage 12:35 14:2 17:9 20:34 30:138 33:63

Ts₃ Action 15:15 16:14
Description 16:14 22:7
Linkage 14:16 15:13 16:14 18:9

ts₄ Action 13:2
Description 13:2 22:7
Linkage 12:35 13:7 19:6,7,10 20:15,34 23:58
24:23 29:36,53 32:70 33:63

Ts Action 13:6 19:27 26:36
Description 13:6 22:7 26:36
Distribution 19:27
Linkage 12:35 14:2 19:11 26:13 28:13 32:54

Ts₆ Action 15:115 16:14 26:36
Description 14:25 16:14 22:7 26:36
Linkage 12:35 14:16,25 15:13 16:14

Tu Action 13:6 14:22 17:43,45 19:27 20:14 21:44 22:21
26:36 27:26,27 28:28,55,76 29:27 31:64,68
32:46 33:39 34:38 35:31,34
Description 13:6 14:22 17:42,44 19:27 20:14 21:44
22:20 25:11 26:36 27:24,25,26,27
28:24,55,76 29:26,27,80 31:64,68 32:46
33:39 34:36,38 35:30,31
Distribution 17:42 19:27 21:44 22:20 25:11 28:24,72
29:26,27 31:64,69 34:36 35:35
Linkage 12:35 14:2 18:15 19:7,11 21:2 22:1 26:13
27:25 28:13 30:163 32:46,54,138 34:36
35:30,31,33
Mutability 22:21

Tu (continued)

Mutation	27:27	29:26,80	35:30					
Structure	34:36	35:30,31						
tu ^f	27:25,26							
tu ^h	27:24,26	29:27	31:64	32:46	34:36	35:30,34		
tu ^{h-d} , tu ^{h-l}	35:31							
tu ⁱ	22:20							
tu ^w	27:24	29:27	33:39					
tw, tw ₂	none							
tw ₃	18:17							
tw ₈₆₃₁ , tw ₈₆₃₇	28:17							
tw _{sh}	13:9							
tw _?	18:17							
v	12:35	15:20	17:7	19:12	32:101	33:78	34:112	35:123,125
v ₂	Linkage	12:35	14:4	15:26	19:12	24:50	26:41	29:52
		30:50	31:5	34:85	35:65			
	Mutation	14:4						
v ₃	12:36	34:109						
v ₄	12:36	14:3,11	15:4	16:4,27	18:10,16	19:6,9,10,11	20:34	
		21:1,2,35	23:5,61	26:10	27:58	28:59,60	30:11,91	31:103
		32:54	33:63	34:36				
v ₅	Description	15:20						
	Linkage	12:36	14:4,14	15:19	16:15	20:15	21:33,49	
		26:41						
v ₆ , v ₇ , v ₈	12:36							
v ₉	15:15	18:17						
v ₁₀	12:36							

v₁₁ none
 v₁₂ 12:36 19:12
 v₁₃ 14:15
 v₁₄,v₁₅,v₁₆ 12:36,37
 v₁₇ 30:77
 v₁₈ 12:36
 v₁₉ 14:18 15:18 25:3
 v₂₀,v₂₁ 12:36
 v₄₈₇₃,v₅₅₇₅,v₈₆₂₃,v₈₆₄₇,v₈₆₆₁ 31:112
 v_a 12:36
 v-N1 25:40
 v_{S-1},v_{S-2},v_{S-3} 23:60
 v_a 12:36
 v_{a2} none
 v_G Action 14:22 24:22 26:36,52 27:76 28:28,55 29:27
 30:67 31:68 33:39,49 34:13,38
 Description 14:22 24:22 25:12,30 26:36,52 27:76
 28:28,55 29:20,26,27 30:67 31:68
 33:39,49 34:13,38
 Distribution 29:27
 Linkage 29:26
 v_p Action 24:13 27:9
 Description 24:13 27:9
 Linkage 12:36 24:13 25:4 27:9

vp₂ Action 29:9 31:29 32:89 35:76
 Description 29:8 31:29 32:89 33:62 35:76
 Linkage 12:36 25:4 26:21 27:9 29:8 30:10
 32:89 33:62
 Mutability 29:8 31:29 33:62 35:76

 vp₃ 12:36

 vp₄ 12:36 24:13 25:4

 vp₅ Action 23:18 24:13 25:5 27:9 29:9 35:76
 Description 21:36 23:18 24:13 25:5 27:9 29:8
 32:90 33:62 35:76
 Linkage 14:14 19:30 21:35,36 23:18 24:13 25:4
 26:21 27:10 29:8 32:90 33:62

 vp₇ 25:4 27:9 26:22

 vp₈ 25:4 26:22 27:9

 vp₉ Action 27:9 34:69
 Description 29:8 33:62 34:70
 Linkage 25:5 27:10 29:8 33:62 34:70
 Structure 34:71

 w 12:36 19:21 24:17

 w₂ 12:36

 w₃ Action 29:9 32:91 34:69,74 35:76,159
 Description 29:8 32:90 33:62 34:24,70,74 35:76,159
 Linkage 27:5 29:8 30:10 32:90 33:62 34:70 35:76
 Structure 32:91 34:71

 w₄,w₅,w₆ 12:37

W₇,W₈,W₉,W₁₀ none
 W₁₁,W₁₂ 12:37
 W₄₈₈₉ 27:5 32:89
 W₅₁₈₃,W₆₄₇₄,W₇₃₆₆ 28:17
 W₇₂₆₃,W₇₇₁₆ 27:5
 W₇₇₄₈ 29:9 33:62 35:75
 W₇₇₅₂ 28:17 29:9
 W₈₃₃₆ 31:112
 W₈₅₂₂ 34:138
 W₈₆₁₃ 31:112
 W₈₆₂₄ 33:62
 W₈₆₃₀ 31:112
 W₈₆₅₇ 34:70 35:75
 W₈₇₂₁,W₈₈₈₉ 31:112,113
 W₈₈₉₆ 34:138
 W₈₉₅₀ 31:113
 W₉₀₀₅ 31:112
 W_{Brawn #2} 35:75
 W_t 13:12
 W_a 15:21
 W_c 17:38 18:16,17 19:30 21:36 29:51 33:74
 W_d 31:80 32:71,81,84 33:56 35:63
 W_h 12:37
 W_l 12:37

WS 18:17 32:80 34:88
 WS₃ 12:37 14:5 23:57 33:54
 WX Action 15:29 23:39,45 24:10,38 25:28 26:5,6
 30:95 31:119,140 32:97 33:103,104
 34:110,111,112,113 35:112,122
 Description 21:4,5 22:59 23:39,45 24:10,38 25:28
 26:6 27:60 31:119 33:103,104
 34:110,111,112,113 35:112,122,123
 Distribution 22:59
 Linkage 12:37 13:1 14:5,21,28 15:5,21 16:2 17:7
 19:6,7,8,9,19,29,30,44 20:34 21:2,4,20,36,49
 22:20,22 24:23,32,56 25:29,30 26:6,11,12,31,34
 27:7,9,38,65 28:10,65 29:51 30:10,15,16,17,19,40,51
 31:5,19,29,31,40,42,60,76,80,91,105,140,162
 32:11,31,44,54,66,74,81,100 33:5,6,38,54,55,70,74,78,103
 34:56,58,59,63,66,67,84,88,112 35:61,63,86,93,94,122,
 123,125,127
 Mutability 21:3,4,5 24:38 27:60
 Mutation 13:3 28:79 29:75 30:99 31:12,39,50 32:20
 33:103,104 34:111,113 35:122
 Structure 33:103 34:111 35:122
 Wx' 21:5
 wx⁹⁰ 33:104 34:112 35:122,123,125
 wx^A 22:59 25:28 30:95 33:104 34:113
 wx^B 33:104
 wx^C 33:104 34:112 35:123,125
 wx^{CoE} 34:112 35:123
 wx^{H21} 33:104
 wx^m 21:4 24:38 27:60
 wx^S 21:4 35:122,123

xn 12:37

Y Action 13:1 17:50 20:23,24 21:47 22:47 26:23 31:110
33:90 34:69,73 35:118

Description 13:1 17:41,48,50 20:23,24 21:47 26:23
30:11 31:110 33:62,66,90,96 34:70,73 35:118

Distribution 13:1

Linkage 12:37 13:8,9 14:14 17:3 18:17 19:6,7,12,20,29
20:15,24,34 21:2,19,35 22:8,20,43 24:23 25:8,29
26:12,13 26:37,42 27:64,67 28:13,20,64 29:38
30:13,31,35 31:34,60,64,104,105,108,110,120,151
32:44,46,54 33:14,66,90,102,131 34:56,58,59,61,63,70,75
35:23,34

Mutability 31:110 33:90 34:73

Mutation 14:25 15:32 29:24 30:99 33:32

Structure 34:71

y^m 31:110 33:90 34:73

Y₂ 12:39 17:50

Y₃ Action 13:1 17:50 20:23,24 21:47 22:47

Description 13:1 17:48,50 20:23,24 21:47 22:57

Distribution 13:1

Linkage 12:37 17:48,50 20:24 21:47

Y₄ 12:37 17:50

Y₅ 20:23,24 21:47,48

Y₆ 22:48

Y₇ 21:47,48 22:47,57

Y₈ 18:2 21:33 22:48

Y_x 12:37 20:23,24 21:47 24:41

Y_D 20:23,24

Y^D, Y^d, Y^R, Y^r 22:48 24:41
 yd 12:37
 Yel_{7716} 27:5
 $yel_{8454}, yel_{8793}, yel_{8954}, yel_{8957}$ 31:113
 yf 12:37
 Yg 12:37 34:85
 Yg_2 Description 18:25 34:2,3
Linkage 12:36,37 13:8 14:6 15:5 16:2 17:7 18:25
30:99 31:42,136 32:69,71,82 33:70,131
34:56,58,59 34:84 35:61,63
Mutation 31:137 34:3 35:82
 Yg_3 12:38 14:18 15:19
 Yg_a 12:37
 $Yg S-3$ 28:59
 Yp 12:39
 ys Action 35:111
Description 35:111
Linkage 12:38 19:12 20:15 23:59 26:41 28:59 29:52
34:85
 ys_2 12:38
 ys_3 35:111
 ys_t 13:12
 yt 12:38
 z 12:38
 zb 17:38 18:16,17 29:53

zb₂,zb₃ 17:31
zb₄ 12:38 13:2 26:41 28:60 30:138,163
zb₅ 12:38
zb₆ 12:38 18:16 30:163
zb₄₃₀₁,zb₄₄₈₅,zb₅₁₈₃ 28:17
zb₅₅₈₈ 27:5
zb_t 13:12
zg,zg₂ 12:38
zg₃ 12:38 18:17 19:31
z1 12:38 17:9 18:7
zn 22:42,43 23:44 24:40



