

III. LINKAGE MAPS OF MAIZE CHROMOSOMES

The following is a linkage map which I propose to use in a forthcoming publication of color pictures of the usable mutants of maize that have been located to chromosome. It includes unpublished information volunteered by a number of corn workers. Most of it is very good but in some cases placement is based on small amounts of data. The reasoning behind this proposal is that publication of any map is subject to error and since this is a good one it is better published, with certain errors understood, than held for an indefinite verification of all facts. This is essentially the same proposal as was made to the Allerton Maize Genetics Conference March 12, 1966, where permission was requested for use with proper qualifications of the data collected by Dr. Earl Patterson in completing this map. I wish to take full responsibility for preparing and presenting the map in this form but to acknowledge that credit for locating the markers goes to many participants in the Maize Coop and that full credit for collecting and arranging the information goes to Dr. Earl Patterson. If you have serious objections or suggestions for changes please write to me before June 1, 1966. The characters in parentheses are those with some doubt as to position. If you have information leading to removal of this doubt or raising a question about established locations, please advise me so the change can be made. Your comments will greatly appreciated.

M. G. Neuffer

<u>Chromosome #1</u>			<u>Chromosome #2</u>		
0	sr ₁	Striate	0	ws ₃	White sheath
1	vp ₅	Vivipary	4	al	Albescent
14	ag	Resistance to grasshoppers	11	lg ₁	Liguleless
15	ga ₆	Gametophyte factor	(rp)		Susceptible to <u>Puccinia sorghi</u>
19	zb ₄	Zebra striped			
23	ms ₁₇	Male sterile	30	gl ₂	Glossy leaf
24	ts ₂	Tassel seed	(34)	d ₅	Dwarf
26	P	Pericarp & cob color	49	B	Booster of plant color
28	zl	Zygotic lethal			
56	as	Asynaptic	54	gs ₂	Green stripe
58	pa	Pollen abortion	56	sk	Silkless
(○)			68	fl ₁	Floury endosperm
64	hm	Susceptible to <u>Helminthosporium carbonum</u>	74	ts ₁	Tassel seed
81	br ₁	Brachytic	83	v ₄	Virescent seedling
85	Vg	Vestigial glumes			
86	f ₁	Fine stripe	(107)	w ₃	White seedling
102	bz ₂	Bronze seed & plant			
104	an ₁	Anther ear	(127)	Ht	Resistant to <u>H. turcicum</u>
(108)	ad ₁	Adherent			
119	Ts ₃	Tassel seed	141	Ch	Chocolate pericarp
127	Kn	Knotted leaf			
(128)	lw ₁	Lemon white			
135	gs ₁	Green stripe			
(154)	vp ₈	Vivipary	NOTE:		
158	Ts ₆	Tassel seed	() = location uncertain		
161	bm ₂	Brown midrib			

<u>Chromosome #3</u>			<u>Chromosome #4</u>		
0	cr ₁	Crinkly leaf	0	de ₁	Defective endosperm
18	d ₁	Dwarf plant			
25			35	Ga ₁	Gametophyte factor
26	ra ₂	Ramosa ear			
31	Cg	Corn grass	(55)	st	Sticky chromosomes
(38)	cl ₁				
40	rt	Rootless	56	Ts ₅	Tassel seed
(45)	Rf ₁	Fertility restoration	(60)	la	Lazy
46	Lg ₃	Liguleless	66	sp ₁	Small pollen
48	Rg	Ragged leaf	71	su ₁	Sugary endosperm
50	gl ₆	Glossy leaf			
55	ts ₄	Tassel seed	73	lo	Lethal ovule
72	ba ₁	Barren stalk	74	de ₁₆	Defective endosperm
(75)	w ₇₇₄₈	White seedling			
83	lg ₂	Liguleless			
(86)	na ₁	Nana	84	zb ₄	Zebra striped
111	a ₁	Anthocyanin	86	gl ₄	Glossy seedling
111.25	sh ₂	Shrunken endosperm			
122	et	Etched endosperm, virescent seedling	107	Tu ₁	Tunicate
			112	j ₂	Japonica
128	ga ₇	Gametophyte factor	118	gl ₃	Glossy seedling
				(c ₂)	Aleurone color
			(138)	Idf	Diffuse

<u>Chromosome #5</u>			<u>Chromosome #6</u>		
(0)	am	Ameiotic	(0)	rgd	Ragged leaf
14	gl ₁₇	Glossy seedling	4	po ₁	Polymitotic
15	a ₂	Anthocyanin			
18	vp ₂	Vivipary	17	Y ₁	Yellow endosperm
19	ps	Pink scutellum			
21	bm ₁	Brown midrib	17	pb ₁	Piebald
			(19)	ms-si	Male sterile-silky
22	bt ₁	Brittle endosperm	37	pg ₁₁	Pale green seedling
25	v ₃	Virescent seedling			
27	bv ₁	Brevis	(43)	Dt ₂	Dotted
(35)	ga ₂	Gametophyte factor	48	Pl	Purple plant color
(37)	ae	Amylose extender	49	Bh	Blotched aleurone
46	pr	Red aleurone			
	(gl ₈)	Glossy seedling	(57)	su ₂	Sugary endosperm
	(lw ₂)	Lemon white	58	sm	Salmon silk
55	ys ₁	Yellow stripe	(59)	Pt	Polytypic
87	v ₂	Virescent seedling	68	py	Pigmy

<u>Chromosome #7</u>			<u>Chromosome #8</u>		
0	Hs	Hairy sheath	0	v ₁₆	Virescent seedling
16	o ₂	Opaque endosperm	14	ms ₈	Male sterile
18	y ₈	Lemon yellow endosperm	28	j ₁	Japonica
20	in	Intensifier		mn	Miniature seed
24	v ₅	Virescent seedling			
(25)	vp ₉	Vivipary			
32	ra ₁	Ramosa ear			
36	gl ₁	Glossy leaf			
46	tp ₁	Teopod			
50	sl	Slashed leaf			
52	ij	Iojap			
71	Bn	Brown aleurone			
109	bd	Branched silkless			
(112)	Pn	Papyrescent glume			

	<u>Chromosome #9</u>		<u>Chromosome #10</u>		
0	Dt ₁	Dotted aleurone	0	Rp	Rust re- sistant (<u>Puccinia sorghii</u>)
7	yg ₂	Yellow green plant			
26	c	Aleurone color	(12)	oy	Oil yellow
29	sh ₁	Shrunken endosperm	16	Og	Old Gold stripe
31	bz ₁	Bronze aleurone and plant	24	nl	Narrow leaf
44	bp	Brown pericarp	28	li	Lineate stripe
59	wx	Waxy endosperm			
	ga ₈	Gametophyte factor			
62	d ₃	Dwarf	33	du ₁	Dull endosperm
			35	zn	Zebra necrosis
(64)	pg ₁₂	Pale green seedling			
(65)	ar	Argentia	38	l ₈	Luteus
66	v ₁	Virescent seedling	43	g ₁	Golden
67	ms ₂	Male sterile		(Tp ₂)	Teopod
69	gl ₁₅	Glossy seedling	57	R ^r	Aleurone and plant color
79	bk ₂	Brittle stalk	58		Red leaf stripe
104	Wc	White cap			
134	Bf ₁	Blue fluorescent	(63)	M st	Modifier of stippled
138	bm ₄	Brown midrib	73	w ₂	White seed- ling
			(92)	sr ₂	Striate
			(99)	l ₂	Luteus
				K ₁₀	Abnormal chromosome appendage