V. REPORT ON MAIZE COOPERATIVE

During the past summer a large series of andromonoecious dwarfs was grown and each stock was tested for allelism with $\underline{d_1}$, $\underline{d_2}$, $\underline{d_3}$, $\underline{d_5}$, and $\underline{an_1}$. The results have not yet been fully summarized, but most of the newly-acquired traits represent alleles at one of the five tested loci. Each of the stocks is being extracted in more uniform background to determine whether some stocks may represent distinct alleles at a particular locus.

Considerable confusion has developed in the labelling of some of the glossies. In several instances, stocks from different sources carrying the same designation have proved to be non-allelic. During the past season all of the known glossies, together with new and unidentified glossies, were grown and intercrossed to eliminate duplication of stocks and permit simplifying records. Some of the glossies were also crossed to wx-marked translocations or to genetic testers to determine or confirm chromosomal locations.

Stocks of brachytics, reduced, compact, and miscellaneous other mature plant dwarfs were increased and allele tested among themselves. In some cases, crosses were made to genetic or chromosomal testers to determine their chromosome locations.

About 900 families of permanently-lettered reciprocal translocations were grown to obtain fresh seed. Included were consecutive translocations from 1-2b to 4-9b. Crosses were made to obtain known homozygotes and heterozygotes and to preserve closely-linked genetic markers. All were outcrossed to adapted lines to increase vigor and standardize the maturity range. This material has not yet been catalogued for distribution.

Several hundred families of untested new chlorophyll traits from Dr. E. G. Anderson's collection were increased. Most of these have now been seedling tested for final evaluation. Some of the best traits, particularly those which survived as homozygotes in the field, were crossed to wx-marked translocations to determine chromosome locations. Most of the F_1's were selfed or testcrossed in the current Florida generation.

The stock collection was moved this winter to improved laboratory facilities provided by the Botany Department. A 45° cold room with capacity for storage of a considerable quantity of seed samples is now in operation.

During 1962, 1932 seed samples were supplied in response to 100 letters of request. Both figures represent an all-time high. Distribution of seed samples was about thirty-five percent higher than in the previous peak year.

The following listing of available stocks is a supplement to those listed last year. Requests for stocks or for copies of stock lists should be sent to the Botany Department, University of Illinois, Urbana, Illinois.

Chromosome 1

ad_1 an_1 bm_2

an_1 Kn bm_2

as

br_1 Vg

Kn

Kn Ts_6

lw_1

P^{CR}

P^{CW}

P^{MO}

P^{RR} ad_1 an_1

P^{RR} ad_1 bm_2

P^{RR} an_1 gs_1 bm_2

P^{RR} br_1 f_1 an_1 gs_1 bm_2

P^{VV}

P^{WR} bm_2

P^{WR} gs_1 bm_2

P^{WW} br_1 f_1 bm_2

P^{WW} br_1 f_1 an_1 gs_1 bm_2

P^{WW} hm br_1 f_1

sr_1

Chromosome 1 (continued)

sr_1 P^{WR} an_1 bm_2

sr_1 P^{WR} bm_2

sr_1 P^{WR} an_1 gs_1 bm_2

sr_1 zb_4 P^{WW}

ts_2 P^{WW} br_1 bm_2

Ts_6

v_{19} bm_2

Vg

Vg an_1 bm_2

vp_5

vp_8

zb_4 ms_{17} P^{WW}

zb_4 P^{WW} bm_2

zb_4 P^{WW} br_1

zb_4 ts_2 P^{WW}

an_{6923}-bz_2 (includes locus of an_1)

necrotic 8147-31

Chromosome 2

al lg_1 gl_2 B sk

al lg_1 gl_2 b sk

ba_2

Chromosome 2 (continued)

fl_1

lg_1 gl_2 B

lg_1 gl_2 b

lg_1 gl_2 b fl_1 v_4

lg_1 gl_2 b fl_1 v_4 Ch

lg_1 gl_2 B gs_2

lg_1 gl_2 b gs_2 sk

lg_1 gl_2 b gs_2 v_4

lg_1 gl_2 b gs_2 v_4 Ch

lg_1 gl_2 B sk v_4

lg_1 gl_2 b sk v_4

lg_1 gl_2 b sk fl_1 v_4

lg_1 gl_2 B v_4

lg_1 gl_2 b v_4

lg_1 gl_2 b v_4 Ch

lg_1 gs_2 b v_4

ws_3 lg_1 gl_2 B

ws_3 lg_1 gl_2 b

ws_3 lg_1 gl_2 b fl_1 v_4

ws_3 lg_1 gl_2 B sk

ws_3 lg_1 gl_2 b sk

Chromosome 3

A_1 ga_7; A_2 C R

A_1 sh_2; A_2 C R

Chromosome 3 (continued)

A^d-3l; A_2 C R

a^p et; A_2 C R Dt_1

a_1; A_2 C R B Pl dt_1

a_1 et; A_2 C R Dt_1

a_1 sh_2; A_2 C R Dt_1

a_1 sh_2; A_2 C R dt_1

a_1^{st} sh_2; A_2 C R Dt_1

a_1^{st} et; A_2 C R Dt_1

a_{x-1}; A_2 C R

a_{x-3}; A_2 C R

ba_1

Cg

cr_1

d_1

d_1 gl_6

d_1 Lg_3

d_1 Rg

d_1 rt

d_1 ts_4 lg_2

d_1 ts_4 lg_2 a_1; A_2 C R Dt_1

d_2

gl_6

gl_6 lg_2 a_1 et; A_2 C R Dt_1

gl_6 Lg_3

Chromosome 3 (continued)

gl_6 Rg

gl_6 v_{17}

gl_7

lg_2 $A_1{}^b$ et; A_2 C R Dt_1

lg_2 a_1 et; A_2 C R Dt_1

lg_2 a_1 et; A_2 C R dt_1

lg_2 a_1 sh_2 et; A_2 C R Dt_1

lg_2 $a_1{}^{st}$ et; A_2 C R Dt_1

lg_2 $a_1{}^{st}$ sh_2; A_2 C R Dt_1

lg_2 pm

Lg_3

Lg_3 Rg

na_1

pg_2

pm

ra_2

ra_2 gl_6 lg_2

ra_2 lg_2 pm

ra_2 Rg

Rg

rt; A_1 A_2 C R

ts_4 na_1

v_{17}

vp_1

Primary trisomic 3

Chromosome 4

bm_3

bt_2

bt_2 gl_4

de(1 or 16?)

$\frac{Ga_1\ Su_1}{ga_1\ su_1}$

gl_3

j_2

j_2 gl_3

la su_1 gl_3

la su_1 Tu gl_3

lw_4; lw_3

o_1

st

su_1 bm_3

su_1 gl_3

su_1 gl_4

su_1 gl_4 Tu

su_1 j_2 gl_3

su_1 o_1

su_1 ra_3

su_1 Tu

su_1 Tu gl_3

su_1 zb_6

su_1 zb_6 gl_3

Chromosome 4 (continued)

su_1 zb_6 Tu

su_1^{am}

Ts_5

Ts_5 su_1

Tu gl_3

v_8

Chromosome 5

a_2; A_1 C R

a_2 bm_1 bt_1 bv_1 pr; A_1 C R

a_2 bm_1 bt_1 pr; A_1 C R

a_2 bm_1 pr v_2; A_1 C R

a_2 bm_1 pr ys_1; A_1 C R

a_2 bt_1 pr; A_1 C R

a_2 bt_1 pr ys_1; A_1 C R

a_2 pr; A_1 C R

ae

bm_1 pr; A_1 A_2 C R

bm_1 pr v_2; A_1 A_2 C R

bm_1 pr ys_1; A_1 A_2 C R

bm_1 pr ys_1 v_2; A_1 A_2 C R

bt_1 pr; A_1 A_2 C R

gl_5

gl_8

Chromosome 5(continued)

gl_{17} bt_1

gl_{17} v_2

lw_2

lw_3; lw_4

na_2

na_2 pr

pr; A_1 A_2 C R

pr ys_1; A_1 A_2 C R

sh^{fl} = "sh_4"

"sh_3" = allele of bt_1

v_3 pr; A_1 A_2 C R

v_{12}

vp_2 gl_8

vp_2 pr; A_1 A_2 C R

vp_7

vp_7 pr; A_1 A_2 C R

Primary trisomic 5

Chromosome 6

at = allele of si_1

po Y_1 pl

Pt

si_1 Y_1 Pl

si_1 Y_1 pl

Chromosome 6 (continued)

si_1 y pl

y_1 l_{10}

y_1 ms(1?)

Y_1 pb_4 pl

Y_1 pg_{11}; wx pg_{12}

y_1 pg_{11}; wx pg_{12}

y_1 Pl Bh

y_1 pl Bh

Y_1 Pl sm py; A_1 A_2 b P^{RR}

Y_1 pl su_2

y_1 pl su_2

Y_1 Pl; seg w_1

Y_1 pl; seg w_1

y_1 Pl; seg w_1

y_1 pl; seg w_1

l_{4920}

"male sterile-silky" = allele of si_1

"orobanche" (seedling)

"ragged" (seedling)

"white 8896" (seedling)

Chromosome 7

bd

g_2

Chromosome 7 (continued)

gl_1 ij bd

gl_1 sl

Hs

ij

in; pr A_1 A_2 C R

o_2

o_2 gl_1 sl

o_2 ra_1 gl_1

o_2 ra_1 gl_1 ij

o_2 ra_1 gl_1 Tp

o_2 v_5 gl_1; seg ra_1

o_2 v_5 ra_1 gl_1

o_2 v_5 ra_1 gl_1 Hs

o_2 v_5 ra_1 gl_1 Tp_1

Tp_1

va_1

vp_9 gl_1; wx

Chromosome 8

v_{16} j_1

v_{16} ms_8 j_1

v_{16} ms_8 j_1; l_1

"necrotic 6697" (seedling)

"sienna 7748" (seedling)

Chromosome 9

Bf_1

bm_4

bp Wx; P^{RR}

C Ds wx

C sh_1 Wx; A_1 A_2 R

C sh_1 wx; A_1 A_2 R

c sh_1 wx; A_1 A_2 R

C wx; A_1 A_2 R

c Wx; A_1 A_2 R

c wx; A_1 A_2 R

Dt_1 (See chromosome 3 stocks)

gl_{15} Bf_1

gl_{15} bm_4

I Ds Wx

I wx; A_1 A_2 R B pl

K_9^L C sh_1 wx; A_1 A_2 R

l_6

l_7

ms_2

ms_2 sh_1; A_1 A_2 C R

ms_{20}

sh_1 wx gl_{15}

sh_1 wx l_7

sh_1 wx v_1

Chromosome 9 (continued)

wx Bf_1

wx Bf_1 bm_4

wx bk_2

wx bk_2 bm_4

wx d_3

wx l_6

Wx pg_{12}; y_1 pg_{11}

wx pg_{12}; Y_1 pg_{11} pl

wx pg_{12}; y_1 pg_{11}

wx^a

yg_2 c sh_1 wx; A_1 A_2 R

yg_2 C sh_1 bz wx; A_1 A_2 R

Chromosome 10

a_3

a_3 g_1

bf_2

du_1

du_1; wx

g_1

g_1 r^g; A_1 A_2 C

g_1 r^{ch}

g_1 r; A_1 A_2 C wx

g_1 R sr_2

Chromosome 10 (continued)	Unplaced genes
g_1 r sr_2	br_2
gl_9	ct
l_1	el
l_1; seg w_1	fl_2
li g_1 R; A_1 A_2 C	gl_{11}
li g_1 r; A_1 A_2 C	gl_{12}
nl_1 g_1 R; A_1 A_2 C	gl_{14}
Og R; A_1 A_2 C B Pl	gl_{16}
r^r; A_1 A_2 C	gl_g
r abnormal 10; A_1 A_2 C	h
R^g sr_2; A_1 A_2 C	l_3
r^r sr_2; A_1 A_2 C	l_4
r^g wx; A_1 A_2 C	mn
R^r: Boone; A_1 A_2 C	ms_5
R^{mb}; A_1 A_2 C	ms_6
R^{nj}; A_1 A_2 C	ms_7
R^{st}; A_1 A_2 C	ms_9
v_{18}	ms_{10}
w_2	ms_{11}
w_2 l_1	ms_{12}
zn	ms_{13}
"oil yellow" (seedling and plant)	ms_{14}
Primary trisomic 10	Mt

Unplaced genes (continued)

rd

Rs_1

rs_2

"sh_5"

v_{13}

va_2

w_{11}

wi

ws_1 ws_2

zb_1

zb_2

zb_3

"luteus 4923" (seedling)

"necrotic 8376" (seedling)

"white 8657" (seedling)

Multiple gene stocks

A_1 A_2 C R^r Pr B Pl

A_1 A_2 C R^g Pr B Pl

A_1 A_2 C R^g Pr B pl lg_1 y_1

A_1 A_2 C R Pr

A_1 A_2 C R Pr wx

A_1 A_2 C R Pr wx gl_1

A_1 A_2 C R Pr wx y_1

Multiple gene stocks(continued)

A_1 A_2 C R pr

A_1 A_2 C R pr su_1

A_1 A_2 C R pr su_1 y wx

A_1 A_2 C R pr y_1 gl_1

A_1 A_2 C R pr y_1 wx

A_1 A_2 C R pr y_1 wx gl_1

A_1 A_2 c R Pr su_1

A_1 A_2 c R Pr y_1 wx

A_1 A_2 c R Pr y_1 sh_1 wx

A_1 A_2 C r Pr su_1

A_1 A_2 C r Pr su_1 y_1 g_1

A_1 A_2 C r Pr y_1 wx

A_1 A_2 C r Pr y_1 sh_1 wx

bm_2 lg_1 a_1 su_1 pr y_1 gl_1 j_1 wx g_1

colored scutellum

lg_1 su_1 bm_2 y_1 gl_1 j_1

su_1 y_1 wx a_1 A_2 C R^g pr

y_1 wx gl_1

Popcorns

Amber Pearl

Argentine

Black Beauty

Popcorns (continued)

Hulless

Ladyfinger

Ohio Yellow

Red

South American

Strawberry

Supergold

Tom Thumb

White Rice

Exotics and Varieties

Black Mexican Sweet Corn
(with B-chromosomes)

Black Mexican Sweet Corn
(without B-chromosomes)

Gourdseed

Maiz chapolote

Papago Flour Corn

Parker's Flint

Tama Flint

Zapaluta chica

Chromosome rearrangements

The following rearrangements are being maintained primarily for use in determining the chromosome locations of new traits. All are marked with closely-linked endosperm or seedling traits.

The cytological positions of Inv 2a were determined by Dr. Morgan; those of Inv 9a were determined by Dr. Li. The indicated interchange points of the reciprocal translocations are taken from published work of Dr. Longley.

Inversions

lg_1 or gl_2 Inv 2a (also available with Ch)	2S.7; 2L.8
wx Inv 9a	9S.7; 9L.9

Reciprocal translocations

wx 1-9c	1S.48; 9L.22
wx 1-9 4995	1L.19; 9S.20
wx 1-9 8389	1L.74; 9L.13
wx 2-9b	2S.18; 9L.22
wx 3-9c	3L.09; 9L.12
wx 3-9 5775	3L.09; 9S.24
wx 4-9b	4L.90; 9L.29
wx 4-9 5657	4L.33; 9S.25
wx 4-9g	4S.27; 9L.27
wx 5-9a	5L.69; 9S.17
wx 5-9c	5S.07; 9L.10
wx 5-9 4817	5L.06; 9S.07
wx 6-9a	6S.79; 9L.40
wx, y 6-9b	6L.10; 9S.37
wx 6-9 4505	6L.13; 9 cent

Reciprocal translocations (continued)

wx 6-9 4778	6S.80; 9L.30
wx 7-9a	7L.63; 9S.07
wx or gl_1 7-9 4363	7 cent; 9 cent
wx 8-9d	8L.09; 9S.16
wx 8-9 6673	8L.35; 9S.31
wx 9-10b	9S.13; 10S.40
su_1 1-4a (also available with P^{RR})	1L.51; 4S.69
su_1 1-4d (also available with P^{RR})	1L.27; 4L.30
su_1 4-5j	4L.21; 5L.36
su_1 y 4-6a	4L.37; 6L.43
su_1 4-8a	4S.59; 8L.19
su_1, R 4-10b	4L.15; 10L.60
y 1-6c (also available with P^{RR})	1S.25; 6L.27
gl_2 2-3c	2S.46; 3S.52
gl_2 2-3 5304	2S.62; 3L.29
gl_2 2-6b	2S.69; 6L.49
gl_2, R 2-10b	2S.50; 10L.75
gl_1 6-7 4545	6L.25; 7S.73

Stocks of A-B chromosome translocations

B-1a	1L.2	Proximal to Hm
B-1b	1S.05	
B-3a	3L.1	
B-4a	4S.25	Proximal to su_1
B-7b	7L.3	Proximal to ra_1
B-9a	9L.5	Proximal to Bf_1
B-9b	9S.4	Between C and wx; close to wx
B-10a	10L.35	Proximal to gl_1

Earl B. Patterson