

IV. REPORT ON MAIZE COOPERATIVE

Stocks of several hundred reciprocal translocations have been maintained during recent years by Dr. D. S. Robertson at Iowa State University. Last summer the periodic task of increasing a portion of these was shared. About 65 translocations from this series were increased at Urbana, and an approximately equal number was grown at Ames. It is hoped that during the next few years fresh seed of this entire group can be obtained for permanent transfer to our collection.

Increases were made last season of Chromosome 6, 7, and 8 stocks, primary trisomics, and unplaced genes. Miscellaneous other stocks needing increase or upgrading were also grown.

During 1964, 1614 seed samples were supplied in response to 95 requests. Of the total, 1390 samples were distributed within the U.S. (86 requests) and 224 samples were sent to foreign countries (9 requests).

The following catalogue of stocks represents a complete listing of available stocks, with the exception of reciprocal translocations listed in the 1962 and 1964 Maize Newsletters. Requests for seed or for copies of stock lists should be sent to E. B. Patterson, S-116 Turner Hall, Agronomy Department, University of Illinois, Urbana, Illinois.

Chromosome 1ad₁ an₁ bm₂ad₁ bm₂an₁ bm₂

as

br₁ Vgbr₂

Kn

Kn Ts₆lw₁

pCR

Chromosome 1 (Continued)

pCW

pMO

pRR ad₁ an₁pRR ad₁ bm₂pRR an₁ gs₁ bm₂pRR br₁ f₁ an₁ gs₁ bm₂

pVV

pWR bm₂pWR gs₁ bm₂pWW br₁ f₁ bm₂

Chromosome 1 (Continued)

P^{WW} br₁ fl an₁ gs₁ bm₂
 P^{WW} hm br₁ fl
 sr₁
 sr₁ P^{WR} an₁ bm₂
 sr₁ P^{WR} bm₂
 sr₁ P^{WR} an₁ gs₁ bm₂
 sr₁ zb₄ P^{WW}
 ts₂ P^{WW} br₁ bm₂
 Ts₆
 v₁₉ bm₂
 Vg
 Vg an₁ bm₂
 vp₅
 vp₈
 zb₄ ms₁₇ P^{WW}
 zb₄ P^{WW} bm₂
 zb₄ P^{WW} br₁
 zb₄ ts₂ P^{WW}
 an₆₉₂₃-bz₂ (includes locus
 of an₁)
 necrotic 8147-31

Chromosome 2

al lg₁ gl₂ B sk
 al lg₁ gl₂ b sk
 ba₂
 fl₁

Chromosome 2 (Continued)

gl₁₁
 Ht
 lg₁ gl₂ B
 lg₁ gl₂ b
 lg₁ gl₂ b fl₁ v₄
 lg₁ gl₂ b fl₁ v₄ Ch
 lg₁ gl₂ B gs₂
 lg₁ gl₂ b gs₂ sk
 lg₁ gl₂ b gs₂ v₄
 lg₁ gl₂ b gs₂ v₄ Ch
 lg₁ gl₂ B sk v₄
 lg₁ gl₂ b sk v₄
 lg₁ gl₂ b sk fl₁ v₄
 lg₁ gl₂ B v₄
 lg₁ gl₂ b v₄
 lg₁ gl₂ b v₄ Ch
 lg₁ gs₂ b v₄
 w₃
 w₃ Ch
 ws₃ lg₁ gl₂ B
 ws₃ lg₁ gl₂ b
 ws₃ lg₁ gl₂ b fl₁ v₄
 ws₃ lg₁ gl₂ B sk
 ws₃ lg₁ gl₂ b sk

Chromosome 3

A₁ ga₇; A₂ C R
 A₁ sh₂; A₂ C R
 A^d-31; A₂ C R
 A^d-31; A₂ C R Dt₁
 A^d-31 sh₂; A₂ C R
 a^P et; A₂ C R Dt₁
 a₁; A₂ C R B Pl dt₁
 a₁ et; A₂ C R Dt₁
 a₁ sh₂; A₂ C R Dt₁
 a₁ sh₂; A₂ C R dt₁
 a₁st sh₂; A₂ C R Dt₁
 a₁st et; A₂ C R Dt₁
 ba₁
 Cg
 cr₁
 d₁
 d₁ gl₆
 d₁ Lg₃
 d₁ ts₄ lg₂
 d₁ ts₄ lg₂ a₁; A₂ C R Dt₁
 d₂
 gl₆
 gl₆ lg₂ a₁ et; A₂ C R Dt₁
 gl₆ Lg₃
 gl₆ v₁₇
 gl₇

Chromosome 3 (Continued)

lg₂ a₁ et; A₂ C R Dt₁
 lg₂ a₁ et; A₂ C R dt₁
 lg₂ a₁ sh₂ et; A₂ C R Dt₁
 lg₂ a₁st et; A₂ C R Dt₁
 lg₂ a₁st sh₂; A₂ C R Dt₁
 lg₂ pm
 Lg₃
 Lg₃ Rg
 na₁
 pg₂
 pm
 ra₂
 ra₂ gl₆ lg₂
 ra₂ lg₂ pm
 ra₂ Rg
 Rg
 rt
 ts₄ na₁
 vp₁
 Primary trisomic 3

Chromosome 4

bm₃
 bt₂
 bt₂ gl₄
 de(1 or 16?)

Chromosome 4 (Continued)

Ga₁ Su₁
 Ga₁^S Su₁
 gl₃
 j₂
 j₂ gl₃
 la su₁ gl₃
 lo
 lw₄; lw₃
 o₁
 st
 su₁ bm₃
 su₁ gl₃
 su₁ gl₄
 su₁ j₂ gl₃
 su₁ o₁
 su₁ ra₃
 su₁ Tu
 su₁ Tu gl₃
 su₁ zb₆
 su₁ zb₆ Tu
 su₁^{am}
 Ts₅
 Ts₅ su₁
 Tu gl₃
 v₈

Chromosome 5

a₂; A₁ C R
 a₂ bm₁ bt₁ bv₁ pr; A₁ C R
 a₂ bm₁ bt₁ pr; A₁ C R
 a₂ bm₁ pr v₂; A₁ C R
 a₂ bm₁ pr ys₁; A₁ C R
 a₂ bt₁ pr; A₁ C R
 a₂ bt₁ pr ys₁; A₁ C R
 a₂ pr; A₁ C R
 ae
 bm₁ pr; A₁ A₂ C R
 bm₁ pr v₂; A₁ A₂ C R
 bm₁ pr ys₁; A₁ A₂ C R
 bm₁ pr ys₁ v₂; A₁ A₂ C R
 bt₁ pr; A₁ A₂ C R
 gl₅
 gl₈
 gl₁₇ bt₁
 gl₁₇ v₂
 lw₂
 lw₃; lw₄
 na₂
 na₂ pr
 pr; A₁ A₂ C R
 pr ys₁; A₁ A₂ C R
 sh^{fl} = "sh₄"
 "sh₃" = allele of bt₁

Chromosome 5 (Continued)

v3 pr; A₁ A₂ C R
 v12
 vp2 gl8
 vp2 pr; A₁ A₂ C R
 vp7
 vp7 pr; A₁ A₂ C R
 Primary trisomic 5

Chromosome 6

at = allele of si₁
 Bh
 pe Y₁ pl
 pe y₁ pl
 Pt
 si₁
 wi
 y₁ l₁₀
 y₁ ms(1?)
 Y₁ pb₄ pl
 Y₁ pG₁₁; wx pG₁₂
 y₁ pG₁₁; wx pG₁₂
 y₁ Pl Bh
 y₁ pl Bh
 Y₁ Pl sm Pt
 Y₁ Pl sm py; A₁ A₂ b pRR
 Y₁ pl su₂
 y₁ pl su₂

Chromosome 6 (continued)

Y₁ Pl; seg w₁
 Y₁ pl; seg w₁
 y₁ Pl; seg w₁
 y₁ pl; seg w₁
 l4920
 "male sterile-silky" =
 allele of si₁
 "orobanche" (seedling)
 "ragged" (seedling)
 "white 8896" (seedling)

Chromosome 7

bd
 g₂
 gl₁ ij bd
 gl₁ sl
 gl₁ Tp₁
 Hs
 ij
 in; pr A₁ A₂ C R
 o₂
 o₂ bd
 o₂ gl₁ sl
 o₂ ra₁ gl₁
 o₂ ra₁ gl₁ ij
 o₂ ra₁ gl₁ Tp
 o₂ v₅ gl₁; seg ra₁

Chromosome 7 (Continued)

o₂ v₅ ra₁ gl₁
 o₂ v₅ ra₁ gl₁ Hs
 o₂ v₅ ra₁ gl₁ Tp₁
 ra₁ gl₁ ij bd
 Tp₁
 va₁
 vp₉ gl₁; wx

Chromosome 8

glg
 v₁₆ j₁
 v₁₆ j₁; l₁
 v₁₆ ms₈ j₁
 "necrotic 6697" (seedling)
 "sienna 7748" (seedling)

Chromosome 9

Bf₁
 bm₄
 bp Wx; pRR
 C Ds wx
 C sh₁ Wx; A₁ A₂ R
 C sh₁ wx; A₁ A₂ R
 c sh₁ wx; A₁ A₂ R
 C wx; A₁ A₂ R
 c Wx; A₁ A₂ R
 c wx; A₁ A₂ R

Chromosome 9 (Continued)

Dt₁ (See chromosome
 3 stocks)
 gl₁₅ Bf₁
 gl₁₅ bm₄
 I Ds Wx
 I wx; A₁ A₂ R B pl
 K₉^L C sh₁ wx; A₁ A₂ R
 l₆
 l₇
 ms₂
 ms₂ sh₁; A₁ A₂ C R
 sh₁ wx gl₁₅
 sh₁ wx l₇
 sh₁ wx v₁
 wx Bf₁
 wx Bf₁ bm₄
 wx bk₂
 wx bk₂ bm₄
 wx d₃
 wx l₆
 Wx pG₁₂; Y₁ pG₁₁
 wx pG₁₂; Y₁ pG₁₁ pl
 wx pG₁₂; Y₁ pG₁₁
 wx^a
 yG₂ c sh₁ wx; A₁ A₂ R
 yG₂ c sh₁ bz wx; A₁ A₂ R

Chromosome 9 (Continued)yg₂ C sh₁ bz wx; A₁ A₂ R

Primary trisomic 9

Chromosome 10a₃bf₂du₁g₁g₁ r^g; A₁ A₂ Cg₁ r^{ch}g₁ r; A₁ A₂ C wxg₁ R sr₂g₁ r sr₂gl₉l₁l₁; seg w₁l₁ g₁ R; A₁ A₂ Cl₁ g₁ r; A₁ A₂ Cnl₁ g₁ R; A₁ A₂ COg R; A₁ A₂ C B Plr^r; A₁ A₂ Cr abnormal 10; A₁ A₂ CR^g sr₂; A₁ A₂ Cr^r sr₂; A₁ A₂ Cr^g wx; A₁ A₂ CR^r: Boone; A₁ A₂ CChromosome 10 (Continued)R^{mb}; A₁ A₂ CR^{nj}; A₁ A₂ CRst; A₁ A₂ Cv₁₈w₂w₂ l₁

zn

"oil yellow"
(seedling and plant)

Primary trisomic 10

Unplaced genes

ct

el

fl₂gl₁₂gl₁₄gl₁₆

h

l₃l₄

mn

ms₅ms₆ms₇ms₉ms₁₀

Unplaced genes (Continued)

ms₁₁
 ms₁₂
 ms₁₃
 ms₁₄
 Mt
 rd
 Rs₁
 rs₂
 "sh₅"
 v₁₃
 va₂
 w₁₁
 ws₁ ws₂
 zb₁
 zb₂
 zb₃
 "luteus 4923" (seedling)
 "necrotic 8376" (seedling)
 "white 8657" (seedling)

Multiple gene stocks

A₁ A₂ C R^r Pr B Pl
 A₁ A₂ C R^g Pr B Pl
 A₁ A₂ C R^g Pr B pl lg₁ y₁
 A₁ A₂ C R Pr
 A₁ A₂ C R Pr wx

Multiple gene stocks
(Continued)

A₁ A₂ C R Pr wx gl₁
 A₁ A₂ C R Pr wx y₁
 A₁ A₂ C R pr
 A₁ A₂ C R pr su₁
 A₁ A₂ C R pr su₁ y wx
 A₁ A₂ C R pr y₁ gl₁
 A₁ A₂ C R pr y₁ wx
 A₁ A₂ C R pr y₁ wx gl₁
 A₁ A₂ c R Pr su₁
 A₁ A₂ c R Pr y₁ wx
 A₁ A₂ c R Pr y₁ sh₁ wx
 A₁ A₂ C r Pr su₁
 A₁ A₂ C r Pr su₁ y₁ gl₁
 A₁ A₂ C r Pr y₁ wx
 A₁ A₂ C r Pr y₁ sh₁ wx
 bm₂ lg₁ a₁ su₁ pr y₁ gl₁ j₁
 wx gl₁
 colored scutellum
 lg₁ su₁ bm₂ y₁ gl₁ j₁
 su₁ y₁ wx a₁ A₂ C R^g pr
 y₁ wx gl₁

Popcorns

Amber Pearl
Argentine
Black Beauty
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

- * gl₂ 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 5-9d 5L.14; 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
- wx 6-9 4778 6S.80; 9L.30
- * wx 7-9a 7L.63; 9S.07
- * wx or gl₁ 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
- su₁ 1-4a 1L.51; 4S.69
- su₁ 1-4d 1L.27; 4L.30
- su₁ 4-5j 4L.21; 5L.36
- su₁ y 4-6a 4L.37; 6L.43
- su₁ 4-8a 4S.59; 8L.19
- su₁ R 4-10b 4L.15; 10L.60
- y 1-6c 1S.25; 6L.27

Reciprocal translocations (Continued)

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

* These constitute a basic series of twenty rearrangements for use in locating unplaced genes.

Stocks of A-B chromosome translocations

B-1a	1L.2	Proximal to <u>Hm</u>
B-1b	1S.05	
B-3a	3L.1	
B-4a	4S.25	Proximal to <u>su₁</u>
B-7b	7L.3	Proximal to <u>ral</u>
B-9a	9L.5	Proximal to <u>Bf₁</u>
B-9b	9S.4	Between <u>C</u> and <u>wx</u> ; close to <u>wx</u>
B-10a	10L.35	Proximal to <u>G₁</u>

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