Last summer progenies of about 10 plants each were grown from the normal seeds on most of the ears that in 1958 segregated extreme defective, intermediate defective, both defectives, or no defective, and a total of about 300 ears was obtained, as presented in Tables II-IX. (The percentages appearing in such tables have been obtained from diagrams constructed on the basis of the actual weights of the individual kernels.)

An inspection of Tables II-VIII confirms what has been described previously, and reported above.

Table IX shows that the non-segregating ears, sibs of those segregating defectives, breed true, in the sense that in successive generations they do not give defective seeds. However, there are some remarkable exceptions: these occur in the progeny of De De ears thatwere derived in the pervious generation from sibs of individuals segregating the intermediate type of defective endosperm. Tentative conclusions can be drawn as follows:

a) the intermediate type of defectiveseedthat is observable in certain derivatives of teosinte introgression is highly unstable;

b) the genetic factors conditioning such a defective may be brought to what can be considered a homozygous condition by selfing heterozygous plants; however, the 25% defective kernels supposed to be homozygotes give rise to plants which appear heterozygous; the progeny of the normal sibs of such homozygotes seems to behave in a relatively normal way (30 proved to be segregating; 16 non-segregating);

c) normal individuals, sibs of homozygous intermediate defectives, in about 2/3 of the cases again segregate defectives; however, the percentage often exceeds significantly the expected 25%, and, besides the intermediate type, the extreme type is found with a consistent proportion; the other 1/3 supposed to be of DeDe genotype occurring in the progeny of ears segregating the extreme de behave in a more orthodox way;

d) the preceding facts seem understandable if an extragenic element, or a controlling element in the sense of McClintock, is postulated, which would interact chiefly with the intermediate type of defective, and to a minor degree with both the extreme one and with the "normal" condition.

-- Angelo Bianchi
-- Annamaria Morandi

2. Mendelian characters in Italian maize varieties.

To detect genetic mutants in Italian varieties, self-pollination has been carried out in a few plants grown from many seed samples of populations grown throughout Italy. The selfed ears were examined and scored first for kernel characters. Subsequently 50 kernels from every ear were germinated in the greenhouse and classified for seedling mutants.

With the exception of color characters (A C R Pl system) the segregation was often 3:1; in other cases the ratio was close to 15:1.

The following mutants have been obtained in a total of 347 selfed-ears belonging to 128 different open-pollinated varieties:

Character	No. of ears in which found a ratio of	
	3:1	15:1
Defective seeds	12	
Opaque endosperm	2	1
Lemon endosperm	1	
White endosperm	1	
Oily spot seedling	3	
Albino seedling	22	1
Dwarf seedling	8	
Booster color	4	3
Luteus seedling	22	2
Yellow-green seedling	13	1
Pale-green seedling	17	3
Fine stripe seedling	73	10
Glossy seedling	19	8
Abnormal growth	6	3
Liguleless plant	6	
Virescent	14	5
Abnormal leaves		1
Yellow stripe	9	
Albescens	1	
Horn-like coleoptile	1	

-- Angelo Bianchi
-- Marisa Pozzi

3. Knobs in open-pollinated maize populations in Italy.

Additional cytological data have been obtained from samples of open-pollinated maize populations, collected throughout Italy.

Some populations have been studied with the following results (to be added to those which appeared in M N L, 1958, p. 13):

Origin	No. of Knobs						Total	B chromosomes
	0	1	2	3	4	5		
Northern Italy	7	17	20	35	11	6	96	0
Middle Italy	5	6	7	1	2	0	21	0
Southern Italy	1	6	4	6	3	1	21	4
Italy	13	29	31	42	16	7	138	

As reported for the samples studied previously (M N L, 1958) the knob frequency is low, and B chromosomes are practically absent.