Character	No. of ears in which found
Defective seeds	12
Sugary endosperm	1
Albino seedling	8
Luteus seedling	9
Virescent seedling	21
Yellow-green seedling	2
Pale-green	2
Glossy seedling	8
Liguleless	3
Striped leaves	4
Abnormal growth	6
Booster color	7

Several "papyrescent" glume types have also been collected, especially in the populations from middle and southern Italy. It may be of interest, also, to note that out of the 12 defective seeds observed only one is from northern Italy, which contributed about 2/3 of the studied samples.

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

According to the results obtained by most of the maize cytologists up to date, knobs are found in 24 different positions of the chromosome set, but the actual existence of the knobs in such positions depends on the strain one is dealing with.

Since the knob endowment of the different varieties is becoming more and more a part of varietal descriptions, to designate the different knobs, it is here suggested adopting a practice similar to that largely used by salivary gland dipterian cytologists and, in order to avoid confusion, to modify slightly the Rhoades proposal (MNL 1957). For instance in chromosome 1, the knobs are as follows: 1S1, 1S2, 1L1; in chromosome 6 the symbols would be 6S1, 6L1, 6L2, 6L3, etc. If new positions are discovered a change would be necessary, according to the location of the new knobs. In every case the numeration would start from the left in the short arm and from the centromere in the long arm.

Samples of open-pollinated maize populations, collected throughout Italy, have been grown in Pavia, Piacenza and Rieti. At the appropriate stage, two or three tassels have been fixed and cytological observations were made.

So far 79 populations have been studied with the following results:

Origin	No. of Knobs 0	1	2	3	4
Northern Italy	10	11	15	13	3
Middle Italy	2	4	7	5	1
Southern Italy	2	1	2	3	0
Italy	14	16	24	21	4

As one can see the average knob number is quite low and in any case does not exceed 4.

The specific identification of the knobs has been possible in many cases. In the following table are summarized the results of the samples where all the knobs have been identified or no knob has been found.

Origin	Position of Knobs 1S2	3L1	4L1	5L1	6L3	7L1	8L1	9S1	B Chromosomes	Total samples
Northern Italy	1	1	1	2	2	7	4	5	2	25
Middle Italy	0	0	1	1	1	0	2	1	0	6
Southern Italy	0	1	1	0	1	1	0	0	0	4
Italy	1	2	3	3	4	8	6	6	2	35

It may be added that: a) no abnormal chromosome 10 has been observed in any case; b) the heteropycnotic region close to the centromere in the long arm of chromosome 7 is often very difficult to find; c) a prominent chromomere may be observed following the 8L1 knob, in position much closer to it than is detectable in American strains.

In several cases incomplete synapsis or precocious desynapsis was present in the pachytene chromosomes. In two cases, metaphases I showed few bivalents and several univalents. A paracentric inversion was possibly present in a plant.

Randolph's scale (Amer. J. Bot. 44: 129) has been adopted to evaluate differences in pachytene chromosome configuration, which range from the rating of 2 to 4. Clumped types of pachytene configurations have not yet been found in Italian varieties. Staining quality was, however, quite variable.

Few samples showed clear centromeres, possibly, as a result of the not very deeply staining quality of the heteropycnotic adjacent regions.

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Anna M. Moa
Antonia Mariani

5. T Cytoplasm male-sterility in Italy.

To valuate the environmental influence on the T type cytoplasmic male sterility the following inbred strains obtained from Dr. D. F. Jones, have been carefully scrutinized during the flowering period in Piacenza, Italy.

Inbred	No. of plants
WF 9T	40
WF 22T	36
A 158T	46
Multiple tester for chromosome 2	10

The male sterility was complete in all the plants, since no pollen shedding has been observed, and the tassel usually showed no exserted anthers.

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1. Separation of S and T pollen restoring genes.

In previous publications it was reported that S sterile inbreds restored to normal pollen production by crossing and backcrossing with Ky21 and selfing gave good restoration when tested on a number of S sterile lines but did not restore T sterile inbreds in all crosses. The same inbreds sterilized by T cytoplasm and restored to normal pollen production by restoring genes from the same Ky21 source have now been tested on both T and S sterile lines. In every case these T sterile lines restored to normal fertility give good restoration in some plants of all T sterile lines tested but fail to restore some S sterile inbreds of the same genotypes. This is further evidence that the fertility restoring genes in Ky21 are different for S and T cytoplasm and can be separated and fixed in the homozygous condition in different lines.