5. G bands in haploid maize.

Haploid seeds were germinated and actively growing root tips were excised and pretreated in .05% colchicine for four hours. The root tips were then fixed in aceto-alcohol fixative for 18-24 hours and stored in 70% ethanol at 0°C until use. A modification of Sumner's technique for human chromosomes was applied. When the prometaphase and metaphase chromosomes were studied, it was found that the long arm of chromosome 7, the terminal region of the short arm of chromosome 9 and the short arm of chromosome 6 had strikingly prominent bands. In addition, less intense bands were visible along the lengths of different chromosomes. Chromosome 1 had three bands, one of which appeared at the proximal end of the long arm and the others in the middle of each of the two arms. Chromosome 2 had bands on both sides of the centromere. The preparation of a complete karyotype is currently in progress.

Parallel with this treatment, the aceto-carmine squash technique was also employed. The darkly staining G bands on chromosomes 7 and 9 were found to occupy regular knob positions. The G band on the short arm of chromosome 6 was in the nucleolar organizer region. The other G bands were not shown by this technique.

Since the Giemsa technique brings out more bands than the common aceto-carmine squash technique, new knowledge of the relationship among different varieties of maize may be gained as more studies are carried out.

Lorraine Sartori

UNIVERSITA' CATTOLICA DEL S.CUORE
Piacenza, Italy
Istituto di Botanica e Genetica vegetale

1. Collapsed endosperm-1 (cp_1) location.

An endosperm mutant linked to gl_1 was previously described under the symbol cl (M.G.C.N.L. 40: 77-78, 1966). In a further report (M.G.C.N.L. 44: 93, 1970) the mutant symbol has been modified from cl

to cp_2. Since Neuffer et al. (The Mutants of Maize, Crop Sci. Soc. Amer., 1968) reported this mutant as cp_1, this last symbol will be hereafter maintained.

1972 backcross data obtained from 16,715 kernels show a 8.0 ± 0.01% recombination between o_2 and cp_1. On the basis of the 1962, 1964 and 1972 data, the recombination values and the order of the chromosome 7 markers o_2, gl_1 and cp_1 should be as follows:

$$o_2 \quad (8.8\%) \quad cp_1 \quad (8.7\%) \quad gl_1$$

$$o_2 \qquad\qquad (14.9\%) \qquad gl_1$$

C. Lorenzoni
M. Pozzi
F. Salamini

CORNELL UNIVERSITY
Ithaca, New York
Department of Plant Breeding and Biometry

1. Evaluations of sources of cytoplasmic male sterility for use in multiplasm hybrid production.

A series of corn inbreds adapted to the Northeastern United States has been crossed onto 39 sources of cytoplasmic male sterility and backcrossed during 3 generations/year for the last three years. The backcross conversions have reached the 8th backcross generation. A list of cytoplasms that were fully male sterile in each inbred background in trials performed in New York in the summer of 1972 and in Florida in the winter of 1972-1973 is presented in Table 1. All of the cytoplasms listed are resistant to Helminthosporium maydis, race T, and Phyllosticta maydis leaf blights. Some of these cytoplasms are currently being incorporated into multiplasm hybrids. A multiplasm version of the single cross hybrid Cornell 101 has been produced using various combinations of male sterile cytoplasms. A limited amount of seed of the cytoplasmic sources is available for distribution.

In addition to the fully male sterile cytoplasms, several cytoplasmic sources form partially male sterile combinations with inbred lines