1. Gametophyte factors in the "standard exotics".

The "standard exotics" of Anderson and Brown were tested this past summer to determine the allelic state at the Ga/ga locus for each variety. The tests were those which we commonly use for determinations of this type -- i.e., a number of plants of the variety pollinated by ga pollen and the same plants used as pollinators for Ga^s/ga^s plants. A variety may fall into one of three categories: full seed set with ga pollen and inability to fertilize Ga^s/ga^s plants (expected from ga/ga varieties), full seed set with ga pollen but the ability to fertilize Ga^s/ga^s plants (Ga/ga varieties), and no seed set with ga pollen and the ability to fertilize Ga^s/ga^s plants (Ga^s/ga^s varieties).

With these tests the "standard exotics" are classified as follows:

Variety	Allele
Maiz Chapalote	Ga^s
Ladyfinger Pop	Ga^s
Papago	Ga
Zapalata Chica	Ga
Argentine Pop	ga
Gourdseed	ga
Tama Flint	ga
Parker's Flint	ga

Tom Thumb pop went out entirely with bacterial wilt so that there was no opportunity to test it. All other tests were satisfactory with little variation between plants within a variety.

The finding that Argentine Pop was ga/ga was unexpected since almost all of the primitive popcorns are Ga^s/ga^s. Another Argentine pop from Mangelsdorf, which was much like the one included in the "standard exotics" except for being earlier and less profusely tillered, was unmistakeably Ga^s/ga^s. In connection with the classification of some varieties as Ga^s/ga^s and others as Ga/Ga, it should be noted that reasonable doubt exists that these are discrete alleles. The supposed Ga^s allele after being separated from most of its original genic background by backcrossing may act in cross-pollination tests as one would expect the Ga allele to behave.