5. The genotypes of two primitive races of maize.

A race of corn with cherry pericarp collected in Panama and Costa Rica and similar to the race, Kculli of Peru, appears to have virtually all of the known pericarp and plant colors. Not all of these are visible in the "pure" race but become so with outcrossing to other races. When cherry pericarp is removed through outcrossing red pericarp becomes visible; when all pericarp color is lacking purple aleurone becomes apparent. In the absence of purple aleurone, brown and orange aleurone can be identified. Thus this race seems to have the following color genes on seven of corn's ten chromosomes: P on chromosome 1, A or A^b on 3, Pr on 5, Pl on 6, Bn on 7, C on 9, and an R allele on 10. Since several of these genes have no visible effects except in combination with others, it is unlikely that they were brought together in one genotype by conscious hybridization and selection on the part of Indian plant breeders. It seems more probable that they represent an assemblage of genes found in one race of wild corn. If so, this race is quite distinct in its genotype from certain other races such as Palomero Toluqueño of Mexico which had an entirely different assemblage of wild genes including Ga, at one time probably Tu, and a gene for pointed kernels on chromosome 4, genes for pilose leaf sheaths on chromosomes 3 and 9 (Paxson, MNL NO. 27), and I on chromosome 9. In this race, too, it is highly unlikely that Indian plant breeders consciously brought all of these together through hybridization and selection--it seems much more probable that Kculli and Palomero Toluqueño have stemmed from distinctly different races of wild corn and that both are probably different from Chapalote, the race found most commonly in archaeological sites.

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6. Oldest prehistoric maize from Mexico may be wild maize.

What is probably the oldest prehistoric maize so far discovered was turned up last winter in preliminary excavations of Aeyerada Cave near Tehuacan in the state of Pueblo, Mexico. The cobs are small and slender and distinctly tapering at both ends. The pedicels are elongated and the glumes and other floral bracts are relatively long and foliaceous. The shape of the cob is typical of Chapalote, one of the ancient indigenous races of Mexico and the predominating race found in the majority of archaeological sites in northwestern Mexico and southwestern United States.

Radiocarbon determinations of this early maize have not yet been made but associated remains indicate that the level at which these primitive cobs occurred is at least 6000 years old. This is older than any other prehistoric maize so far described. We think that this maize is one representing the earliest stage of domestication or possibly wild maize.

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