3. A new maize monosomic.

In examining the somatic chromosome numbers of a population of more than 300 diploid highly maize-like derivatives of maize and perennial teosinte, six plants were noted having root tips with only 19 chromosomes. Two of these plants died while still juvenile. The remaining four were later examined from microspores. Two of these had a "germline" count of 20 chromosomes, while the last two were true monosomics. Analysis of pachynema revealed that one was monosomic for chromosome 6, and the other monosomic for chromosome 9. It appears that only monosomic 6 and 10 are previously reported. An obvious use for perennialism would be to dependably maintain such rare and highly useful stocks as these, once they are found.

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4. An apparent case of andromictic reproduction in maize.

A field corn single cross was pollinated by a sweet corn hybrid by applying sweet corn pollen to aged field corn silks. Among three derived ears, one sugary-type kernel was found. This exceptional kernel grew readily and produced a vigorous, fertile plant, which was selfed. The selfed progeny bore no trace of field corn ancestry in any phenotypic trait, and completely lacked any segregation of the field corn alleles for starchy kernels and red cob. There was, however, segregation for phenotypic traits within the "type" of the original heterotic sweet corn male parent, indicating that this was not a case of haploid apomictic androgenesis. It seems most likely that the exceptional plant derived by means of double pollen fertilization, followed by fusion of two male gametes. It is, of course, possible that the exceptional embryo derived by means of apomictic development of a functioning, exceptional 2n pollen grain from the sweet corn parent, but in view of the competitive disadvantage of 2n male gametophytes, this is considered a less likely alternative.

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