

2. Archaeological evidence on the role of teosinte.

The characteristics of both the La Perra and Bat Cave maize seem to rule out any possibility that maize stemmed from teosinte or anything closely resembling it. Yet other prehistoric material shows clearly that teosinte (or *Tripsacum*) has played an important role in the later evolution of maize. Cobs from Cebollita Cave in New Mexico, excavated by Mr. Reynold Ruppe, show that the earliest maize was "pure" maize and the more recent material highly tripsacoid. The most tripsacoid prehistoric maize yet discovered has come to us from caves at Montezuma National Monument in Arizona, excavated by Mr. Lloyd Pierson. Only a small fraction of the several thousand cobs can be classified as "pure" maize.

Many of the specimens in both the Cebollita Cave and Montezuma Castle material are almost exact counterparts of segregates from maize-teosinte hybrids and can be matched detail for detail with these modern specimens. The resemblance includes among other characteristics the lignification of the tissues. This can be measured quantitatively in terms either of specific gravity or solubility in sulphuric acid. There is good reason to believe that one of teosinte's principal contributions to the evolution of modern maize has been to provide structural strength which has in turn permitted the development of large ears.

Paul C. Mangelsdorf and
Walton C. Galinat