

## Winnowing the archaeological evidence for domesticated sunflower in pre-Columbian Mesoamerica

Lentz *et al.* (1) propose that, along with being domesticated in eastern North America (ENA) by 2800 B.C. (2, 3), the sunflower was independently domesticated and widely cultivated in pre-Columbian Mesoamerica. Archaeological evidence presented, however, falls far short of an adequate supporting argument for their claim. Pre-Columbian contexts in ENA have yielded >3,000 domesticated sunflower achenes, seeds, stalks, and discs. In contrast, Lentz *et al.* list 17 potential sunflower specimens from Mesoamerica. Based on their small size, 11 of these are designated as wild. Misidentified as “domesticated” (1), the Santa Leticia achene (3.9 mm in length) (4) also falls in the size range of wild sunflower (5). Even if they are eventually confirmed as wild sunflower rather than taxa having similar morphology, these 12 achenes provide no support for sunflower domestication in Mexico. Two of the five remaining specimens also present taxonomic problems. Inadequately described and cleaned (1) prior to low-resolution photography and destruction for dating, the San Andres specimens exhibit no morphology diagnostic to the genus or species level (3) and could well represent *Lagenaria siceraria* rather than sun-

flower (5). Despite the expert identification of >100,000 well preserved archaeobotanical specimens from across Mesoamerica, the potential archaeological evidence for sunflower can be winnowed down to the three specimens from the 290 B.C. Gallo site. Unfortunately, only one of these is briefly described (1), and all three appear to fall within the size range of the Marble Bluff (Arkansas) sunflower assemblage ( $n = 260$ ), which predates Gallo by >1,000 years.<sup>†</sup> If ever confirmed as *H. annuus*, the Gallo achenes could well represent an introduction from ENA.

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