

How old is the sunflower in Mexico?

Contrary to Lentz *et al.* (1), I suggested that the sunflower was carried from North America to Europe, not from North America to Mexico. They also misinterpret a number of early documents. In the original Mexican edition of Hernández, Ximénez (2) neither included a drawing of sunflower nor indicated its use by Indians (indios). Hernández called the sunflower *chimalacatl* and variants, which translates as “shield reed” or “shield flower.” Lentz *et al.* concluded that when used in Sahagún (3) the term “chimalacatl” refers to sunflower. They fail to mention that Hernández (4) applies the term to more than one plant, however, while citing my paper in which this is reported. Two of the different *chimalacatl* described by Hernández are pertinent here: *Del CHIMALACATL acatlicpacense o escudo de caña. . . . Carrizo de escudos, esto es, propio para hacer escudos o rodela*s (“Reed of shields . . . suitable for making shields or round shields”), and *CHIMALACAXOCHITL o flor de chimalacatl . . . carrizo propio para escudos o rodela*s, y *xochitl, flor*. (“flower”). These two *chimalacatl* are likely the shield reed and the shield flower of Sahagún (3). Thus, Sahagún’s drawings that Lentz *et*

al. purport to be sunflowers (which do not resemble sunflowers) have to refer to another plant. I agree that Hernández’s description demonstrates his knowledge of sunflower, but this could have been acquired from observation of plants in Spain and his reading of herbals. From Monardes (2) he could have learned that the sunflower was used as an aphrodisiac, and almost certainly his designation of Peru as its homeland comes from Dodonaeus (5). I have yet to see any historical records that confirm the early presence of the sunflower in Mexico.

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1. Lentz DL, Pohl MD, Alvarado JL, Tarighat S, Bye R (2008) Sunflower (*Helianthus annuus* L.) as a pre-Columbian domesticate in Mexico. *Proc Natl Acad Sci USA* 105:6232–6237.
2. Heiser C (1998) The domesticated sunflower in old Mexico? *Genet Resour Crop Evol* 45:447–449.
3. Sahagún B (1569) *Florentine Codex. General History of the Things of New Spain. Book 9—The Merchants*; trans Dibble CE, Anderson AJO (1959) (School of American Research, Univ of Utah, and Museum of New Mexico, Santa Fe), No 14, Part X.
4. Hernández F (1942) *Historia de las Plantas de Nueva España* (Imprenta Universitaria, Mexico City, Mexico), Vol I.
5. Heiser C (1951) The sunflower among the North American Indians. *Proc Am Philos Soc* 95:432–448.

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