Fig. 1 Male deity in lotus posture (*padmasana*) holding an object the upper half of which is beaded and the lower half smooth (arrow).

Fig. 2 Female deity holding a beaded type of ornamentation tapering at both ends, claimed to be a maize ear.

July 1970. A careful analysis of more than 50 friezes on the outer side of the temple led us to conclude that these objects do not represent maize ears (J.K.S. Sachan, *et al.* in *Advances in Crop Improvement* (eds R.B. Singh *et al.*) 41–48; Kalyani, 1982).

The Kesava temple of Somnathpur was built in 1268 AD by a high officer Soma or Somnatha under the Hoysala King Narsimha the third. The friezes were decorated by the chief sculptor Mallithamma. Both gods and goddesses are seen to hold an object having a fully or partially beaded type of ornamentation in one hand and *kalash* (pitcher) in the other (Figs 1,2). The objects are oblong, broadly cylindrical, and either conical or resembling a mango fruit in shape. In some friezes, the male deity is holding an object with only partially beaded ornamentation, that is, the upper headed half has a greater diameter than the lower smooth half (Fig. 1). In some sculptures the object is thicker in the middle and tapers at both ends. When some of these objects are viewed in isolation, a few of them may appear to resemble a maize ear in a gross way because of the beaded type of ornamentation (Fig. 2). But when all the sculptures are analysed, it becomes evident that the objects do not represent a maize ear.

The Hoysala tradition in sculpture is famous for its heavily ornamentated images. In the friezes the beaded ornamentation is represented by the gold necklace, and also in the headgear, in *kardhani* worn around the waist and which hangs on the thighs, and *kalash*. Based on the evidence presented above, we can exclude the possibility that the beaded object in the hand of the goddess is a maize ear.

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Short but faithful pieces of ancient DNA

SIR—Pääbo and Wilson[1] point out the advantage of using *in vitro* DNA amplification by polymerase chain reaction (PCR)[2], rather then traditional cloning, in the analysis of ancient DNA from mummified tissues. We would like to add some data that arose from a series of experiments on a sample of Precolumbian maize. Although, as far as we know, the sample has not been submitted to mummification treatment of any sort, the data from it closely support Pääbo and Wilson's observations in showing both that only short pieces of DNA can be amplified from ancient DNA and that ancient DNA is faithfully amplified by *Taq* polymerase.

The sample comprised nine well preserved maize ears from a Huari tomb (Peru coast) kindly supplied by Centro Studi Ricerche Ligabue of Venice. Maize grains were radiocarbon dated by Geochron Laboratories MA to 980 ± 95 yr before present (reference year 1950).

To isolate nucleic acids, single maize seeds were first washed with an SDS-EDTA-based mixture to remove possible external contaminants, soaked overnight in a medium of the same composition and then homogenized by mortar and pestle. Nucleic acids were extracted by phenol, phenol chloroform and chloroform, followed by ethanol precipation.

After further purification by electrophoresis on low-gelling agarose and re-extraction, the DNA fraction was submitted to enzymatic amplification using an automatic thermal cycler[3] and four PCR systems designed as follows. CoxI 'long' was aimed at the nucleotide sequence from −180 to −30 of the miochondrial cytochrome *c* oxidase subunit I from fertile maize[4]; CoxI 'short' spanned a reduced portion of the same sequence (−160 to −30). Similarly, the H2a 'long' spanned the first 149 nucleotides of the clone H2a of a family of highly repeated sequences present in heterochromatin-rich maize[5], while H2a 'short' covered only nucleotide 49 to 149 of the same sequence. The result of the amplification reactions (40 cycles) was that while the two 'long' PCR systems did not produce detectable amplification products, the two 'short' systems both generated amplification bands of the expected length (respectively 130 and 100 base pairs).

The 130-base-pair band produced by the 'short' CoxI system was further characterized by restriction digestion with *Hae*III, terminal labelling with ^{32}P and fractionation on high-resolution polyacrylamide gel. This revealed the presence of a *Hae*III restriction site located at the position expected from the corresponding nucleotide sequence of modern maize DNA — evidence that the ancient DNA had been faithfully amplified.

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1. Pääbo, S. & Wilson, A. C. *Nature* **334**, 387–388 (1988).
2. Saiki, R. K. *et al. Science* **239**, 487–491 (1988).
3. Rollo, F., Amici, A. & Salvi, R. *Nucleic Acids Res.* **16**, 3105–3106 (1988).
4. Isaac, P. G., Jones, V. P. & Leaver, C. J. *EMBO J.* **7**, 1617–1623 (1985).
5. Viotti, A., Privitera, E., Sala, E. & Pogna, N. *Theor. appl. Genet.* **70**, 234–239 (1985).

Scientific Correspondence

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