Early farmers minded their own beeswax

Chemical traces of honeybee products discovered on Neolithic pottery from Europe to the Middle East.

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Neolithic farmers may have been well-acquainted with bees and beeswax.

Early farmers had a sweet tooth. Pieces of Neolithic crockery from Europe, the Middle East and North Africa dating back 9,000 years bear chemical traces of beeswax, according to an analysis of thousands of potsherds that appears in *Nature* today[1].

Farming cultures of the time probably sweetened their food with honey, but bee products may have also found use in religious ceremonies and early medicines, researchers suspect.

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The relationship between humans and bees is much more ancient. A 40,000-year-old lump of beeswax from Border Cave in South Africa may have been used to help bind stone points to wood to make spears[2], for instance, and depictions of beehives are common in prehistoric rock art found all over sub-Saharan Africa.

But the latest research is the strongest evidence yet that early farming cultures widely exploited products from honeybees (*Apis mellifera*).

Agriculture emerged in the Middle East around 10,000 years ago, and waves of migrants carried the practice to Europe. A team led by Mélanie Roffet-Salque and Richard Evershed, chemists at the University of Bristol, UK, looked for beeswax residues in more than 6,400 clay cooking vessels across Eurasia dating from between 9,000 and 4,000 years ago. Evershed's team has previously discovered fat signatures of meat, dairy and cheese in some of the same ancient crockery.

Rare but widespread

Traces of beeswax fats were relatively uncommon — just 4 out of the 570 vessels from northwestern Anatolia bore traces of bee products — but geographically widespread, the researchers found. Neolithic pottery from southern Britain and Denmark to the Balkans contained beeswax, as did artefacts from a 7,000-year-old site in Algeria. An iconic, nearly 9,000-year-old site in Turkey called Çatalhöyük contained the oldest beeswax-bearing pot. A honeycomb pattern is painted onto a wall at this site, the authors note.

Roffet-Salque says the widespread use of bee products among Neolithic groups could mark the beginnings of honeybee domestication. Neolithic farmers began co-opting cattle, pigs and other animals around this time, and may have seen honeybees in a similar light.

But climate limited the spread of bees — whether wild or farmed — into Northern Europe. Pottery from Ireland, Scotland and northern Scandinavia contained no traces of beeswax, Roffet-Salque notes.

“The paper is fantastic for what it shows about how bees are being used as a resource,” says Helen Anderson, a rock-art specialist at the British Museum in London. She has catalogued bee-related imagery in rock paintings from Africa, including Zimbabwe and Tanzania. She suspects that ancient Africans were honey hunters, not bee-keepers, but she wonders whether there are parallels between how humans used bees in Europe and the Middle East, and how they used the insects in Africa. “Perhaps while the archaeology isn’t there in Africa, we can start to make those comparisons,” she says.

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References

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2. d'Errico, F. *et al. Proc. Natl Acad. Sci. USA* **109**, 13214–13219 (2012).