Neanderthals may have been shallow free divers, suggests a new study

Enlarge / Because Mediterranean smooth clams live up to their name, their shells produce a cleaner cutting edge than others.

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There may be a little more evidence to suggest that Neanderthals waded, swam, and even dove to gather resources along the shores of the Mediterranean. A new study claims Neanderthals at a coastal cave in Italy waded or dove to get clamshells straight off the seafloor to make scraping tools.

Swiping seashells straight from the seafloor?

Neanderthals who lived at Grotta dei Moscerini around 100,000 years ago used the sturdy shells of Mediterranean smooth clams to make sharp-edged scraping tools. Clamshells wash up on beaches all the time, but University of Colorado archaeologist Paola Villa and her colleagues say that some of the worked shell tools at Moscerini look less like flotsam and more like someone scooped them off the seafloor while they were still fresh.

Shells that wash ashore after their former tenants die usually show signs of sanding and polishing, as they spend time being

bounced along the sandy bottom by waves. Many also feature small holes where a marine predator drilled its way inside. But nearly a quarter of the 171 shells at Moscerini looked surprisingly pristine, aside from the changes made by Neanderthals.

If Villa and her colleagues are right, Neanderthals at Moscerini may have practiced free diving, and they certainly did a lot of wading. Mediterranean smooth clams usually live in at least half a meter (1.6 feet) of water, and usually more. They bury themselves just beneath the sand, and it's easy to spot where their feeding siphons reach up to the water above. Neanderthals could have easily scooped them up by hand if they were willing to go deep enough.

Winter by the sea

Members of the hominin family tree have used shells to cut and scrape things for at least 430,000 years, when *Homo erectus* groups on the shores of Java used freshwater mussel shells as tools. Even after agriculture reached most of Europe during the Neolithic period around 9,000 years ago, people still used mussel shells to clean hides and finish the surfaces of ceramic vases. But usually, people just picked shells up and used them, without any kind of reworking to make them better tools. Moscerini is one of the only known sites were people were working shells into a particular sharp-edged shape, as if it were flint.

Shells have thin, sharp cutting edges, and they're relatively easy to sharpen when they start to dull, unlike flint. They may also simply have been convenient for Neanderthals living on the beach. Based on the low density of artifacts in the cave, Villa and her colleagues suggest that Neanderthals used it as a seasonal home, probably while they harvested shellfish during the winter months. It's easy to imagine that they brought a few tools with them and otherwise "roughed it" by

using what was available locally—some flint from nearby outcrops, but also clamshells.

Of course, clams are also edible, if you like that sort of thing. But according to Villa and her colleagues, the shells were probably the point, while the clam meat was more of a tasty bonus. Mediterranean mussels are more common and easier to harvest in large quantities, because they cling to submerged rocks in large clusters, making them a more efficient food choice. (Interestingly, none of the mussel shells at Moscerini shows signs of being worked or used as tools, possibly because they weren't sturdy enough).

But why go to the effort of wading or diving when the tide would bring plenty of clamshells right to the beach? Most of the clamshells at Moscerini seemed to have been picked up on the beach, so Neanderthals certainly seemed to prefer convenience. But they may have resorted to wading or diving when there weren't enough shells, or shells of the right size, washing up on the beach. Villa and her colleagues say shells collected from the seafloor tend to be slightly thicker, on average, than the ones that wash ashore.

Making shellfish assumptions

The clamshell postmortem evidence isn't exactly definitive, but it's not terribly shocking to suggest that *Homo sapiens* didn't invent wading and diving. In fact, it would probably be more surprising if a close hominin relative spent a few millennia alongside a temperate body of water without taking up diving. Plenty of evidence, including isotopic ratios in fossil bones, supports the idea that Neanderthals living along the Mediterranean coast ate shellfish, marine mammals, and fish. They also seemed prone to surfer's ear, which suggests that at least some Neanderthals spent a lot of time in or near the water.

"The technical competence, capacity for innovation, and broad

knowledge of the environmental resources have a greater time depth among non-modern humans than commonly acknowledged," wrote Villa and her colleagues. In other words, Neanderthals were smarter and more competent than we've given them credit for until recently.

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