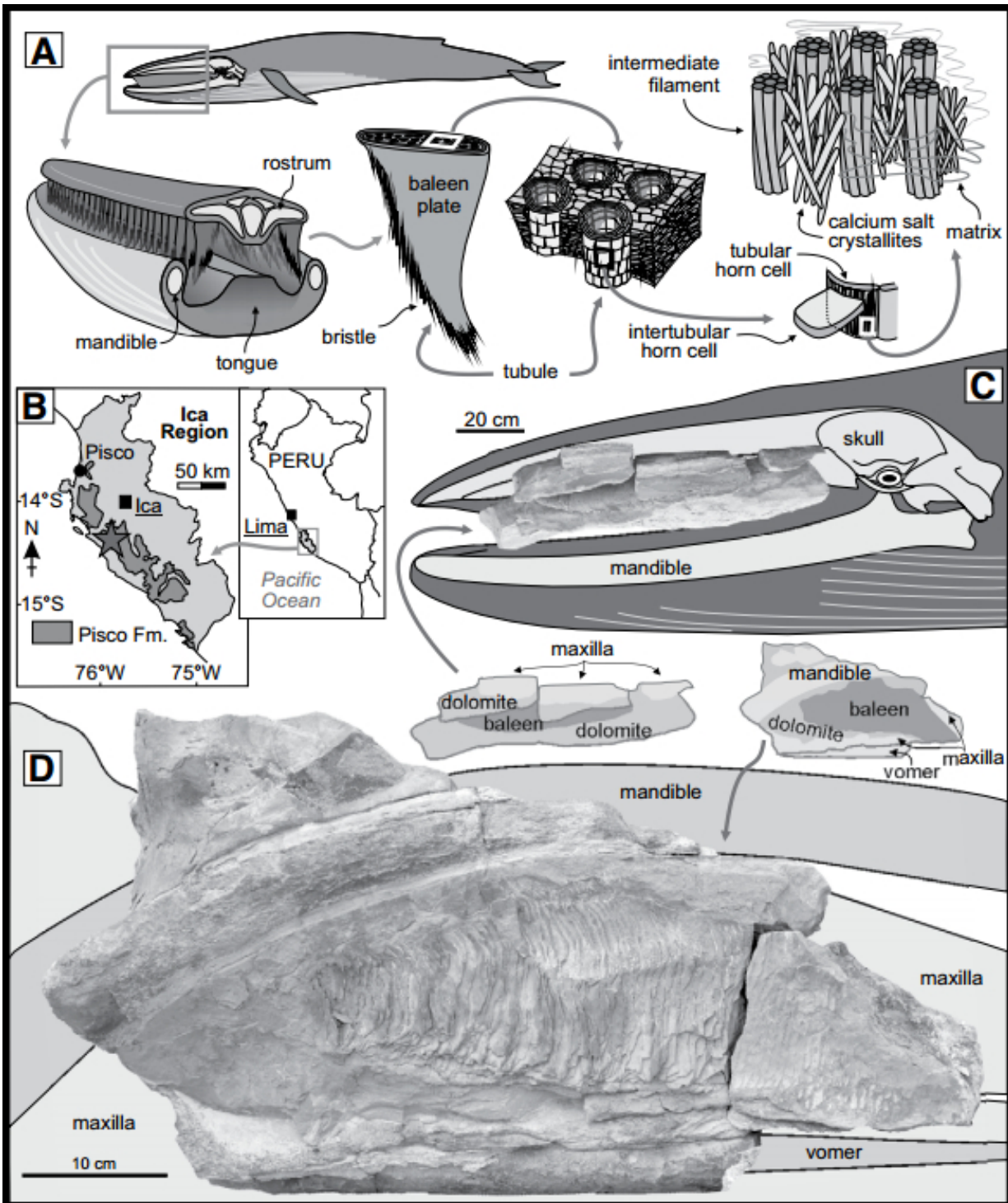


Whales in the desert

August 24 2016



A: Main baleen features of an extant rorqual, at different scales; tubule diameter ~0.5 mm (modified and redrawn from Szewciw et al., 2010). B: Location of Cerro Colorado, Peru (detailed map in Fig. DR1 [see footnote 1]). C: Left baleen rack of the baleenopteroiid specimen M1 as found in the field, with

drawing showing the original position in the whale skull. D: Right baleen rack of specimen M1. Larger images are available from the lead author. Credit: Anna Gioncada and *Geology*.

In Cerro Colorado, located in the Ica Desert of Peru, sedimentary sequences dating back nine million years have been found to host the fossil skeletons of hundreds of marine vertebrates.

In 2008, remains of a giant raptorial sperm whale, *Livyatan melvillei*, were discovered at this site. In September 2014, the same international team of researchers, guided by Giovanni Bianucci from Pisa University (Italy), found a [partial skeleton](#) of a mysticete whale in a rock boulder.

Besides [fossil bones](#) of the skull and mandibles, the rock containing the skeleton showed perfect casts of the whale baleen. The exceptionality of the finding is that the casts provide details at the submillimetric scale, revealing under the microscope the subtle structure of the baleen bristles. Indeed, fossilized baleen bristles have been studied for the first time by chemical and mineralogical analyses.

The data obtained allow researchers to compare the Miocene whale feeding habits to those of the extant sea whale, and strengthen the preservation potential of the Ica desert for the marine vertebrate fossil record.

More information: Inside baleen: Exceptional microstructure preservation in a late Miocene whale skeleton from Peru, Anna Gioncada et al., <http://geology.gsapubs.org/content/early/2016/08/23/G38216.1.abstract>.

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