

At 400, clam may be longest-lived animal known

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Can you imagine living four centuries? Scientists say they've found an animal that did just that: a quahog clam, *Arc-tica islandica*, that lived and grew in the cold waters off Iceland's north coast for at least that long.

When Shakespeare was writing his greatest plays, the researchers say "when Gior-dano Bruno was burnt at the stake in Rome for claiming infinite habitable worlds exist" this mollusc was but a tender youth, oblivious to these developments. Courtesy Bangor University

The Guinness Book of Records gives the current record for longest-lived animal to another Arc-tica clam, age 220, collected in 1982 from American waters. Unofficially, the record belongs to a 374-year-old Icelandic clam found in a museum. Both these records, the researchers said, seem to have been eclipsed by the latest specimen, whose age, 405 to 410 years, they assessed by counting annual growth lines on its shell. The scientists, from Bangor University in the U.K., are sclerochronologists, who study clam growth and age using growth lines much as dendrochronologists study tree growth using tree-rings. Clam shell growth is related to environmental conditions such as sea temperature, salinity and food availability. The Bangor team analyzes the growth histories to understand changes in the ocean linked to climate change. The clam was dredged up by Paul Butler and James Scourse of the university during a research cruise last year as part of a European Union investigation of historical climate changes. The discovery was made by Al Wanamaker, the newest member of the university's "Arc-tica" team, said member Chris Richardson. "Al and Paul rushed up to my office to announce that they had found a record-breaker," he recounted. Further examination, he said, confirmed the clam had beaten the previous record by three decades. Why do these clams live so long? The Bangor investigators believe the molluscs may have evolved exceptionally strong defenses against destructive aging processes. "If, in *Arc-tica islandica*, evolution has created a model of successful resistance to the damage of aging, it is possible that an investigation of the tissues of these real life Methuselahs might help us to understand the processes of aging," said Richardson.

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