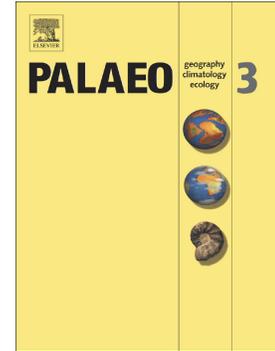


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Shell sclerochronology and stable isotopes of the bivalve *Anomalocardia flexuosa* (Linnaeus, 1767) from southern Brazil: Implications for environmental and archaeological studies

André Carlo Colonese, Sérgio Antônio Netto, André Silva Francisco, Paulo DeBlasis, Ximena S. Villagran, Raquel de Almeida Rocha Ponzoni, Y. Hancock, Niklas Hausmann, Deisi Sunderlick Faria, Amy Prendergast, Bernd R. Schöne, Francisco William da Cruz Junior, Paulo César Fonseca Giannini



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1 **Shell sclerochronology and stable isotopes of the bivalve *Anomalocardia flexuosa* (Linnaeus, 1767)**
2 **from southern Brazil: implications for environmental and archaeological studies**

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4 André Carlo Colonese¹, Sérgio Antônio Netto², André Silva Francisco², Paulo DeBlasis³, Ximena S.
5 Villagran³, Raquel de Almeida Rocha Ponzoni⁴, Y. Hancock^{4,5}, Niklas Hausmann^{1,6}, Deisi Sunderlick Faria⁷,
6 Amy Prendergast⁸, Bernd R. Schöne⁸, Francisco William da Cruz Junior⁹, Paulo César Fonseca Giannini⁹

7
8 1 - BioArCh, Department of Archaeology, University of York, Environmental Building, Wentworth Way,
9 York, YO10 5DD, UK.

10 2 - Marine Science Laboratory, Universidade do Sul de Santa Catarina (UNISUL), Av J. Acácio Moreira,
11 787, Dehon Tubarão, 88704-900, Brazil.

12 3 - Museu de Arqueologia e Etnologia, Universidade de São Paulo (USP), Av. Prof. Almeida Prado, 1466 -
13 Butantã, São Paulo, 05508-070, Brazil.

14 4 - Department of Physics, University of York, Heslington, York, YO10 5DD, UK.

15 5 - York Centre for Complex Systems Analysis, University of York, York, YO10 5GE, UK.

16 6 - Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, P.O. Box
17 1527,GR-711 10 Heraklion, Greece.

18 7 - Grupep, Universidade do Sul de Santa Catarina (UNISUL), Av J. Acácio Moreira, 787, Dehon Tubarão,
19 88704-900, Brazil.

20 8 - Institute of Geosciences, University of Mainz, J.-J.-Becher-Weg 21, 55128 Mainz, Germany.

21 9 - Instituto de Geociências, Universidade de São Paulo (USP), R. do Lago, 562, Cidade Universitária, São
22 Paulo, 05508-080, Brazil .

23
24 **Corresponding author:** Andre Carlo Colonese, andre.colonese@york.ac.uk

25
26 **Abstract**

27 We conduct the first stable isotopic and sclerochronological calibration of the bivalve *Anomalocardia*
28 *flexuosa* (Linnaeus, 1767) in relation to environmental variables in a subtropical coastal area of southern
29 Brazil. We investigate incremental shell growth patterns and $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ values of modern specimens
30 collected alive from the Laguna Lagoonal System (LLS). As shells of *Anomalocardia flexuosa* are also the
31 main components of pre-Columbian archaeological shell mounds and middens distributed along the
32 Brazilian coastline, late Holocene archaeological specimens from a local shell mound (Cabeçuda) were
33 selected to compare their stable carbon and oxygen isotopes with those of modern specimens. Shell
34 growth increments, $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ values respond to a complex of environmental conditions, involving,

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