

Autoclave aquaria allow for high-pressure culture experiments on deep-sea benthic foraminifera

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Our understanding of palaeodeep-water circulation modes and deep-water renewal in the world's oceans is essentially based on isotopical and geochemical ratios recorded in tests of calcareous deep-water benthic foraminifera that precipitate their shells in a constant ratio to the surrounding water mass. However, as more field data are assembled it appears that the documentation of deep-water in benthic foraminiferal shells is not always straightforward. Therefore, culture experiments on deep-sea benthic foraminifera are needed to verify the established palaeodeep-water proxies. However, to our knowledge, barophilic species like *F. wuellerstorfi*, the most trusted species for reconstructions of palaeodeep-water circulation and ventilation, neither formed new chambers nor reproduced in mesocosms kept at 1 bar. To accommodate this problem we have developed facilities and procedures that allow long-lasting high-pressure culture experiments on undepressurized deep-sea sediments and associated fauna and flora. In this presentation I will describe the experimental set-up and present results from methane-seepage simulations.

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