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Supplement of

Element / Ca ratios in Nodosariida (Foraminifera) and their potential application for paleoenvironmental reconstructions

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1. Quality data check.

To test the potential effect of contaminant phases on the reported Mg/Ca and Na/Ca dependencies on salinity and temperature, we tested for correlations between Mn/Ca versus Mg/Ca, Al/Ca versus Mg/Ca, and Sr/Ca versus Mg/Ca. Both the species combined, as well as the species individually, show for Mg and Mn no correlation between any of the El/Ca combinations, and for all the data shew Sr stable incorporation.

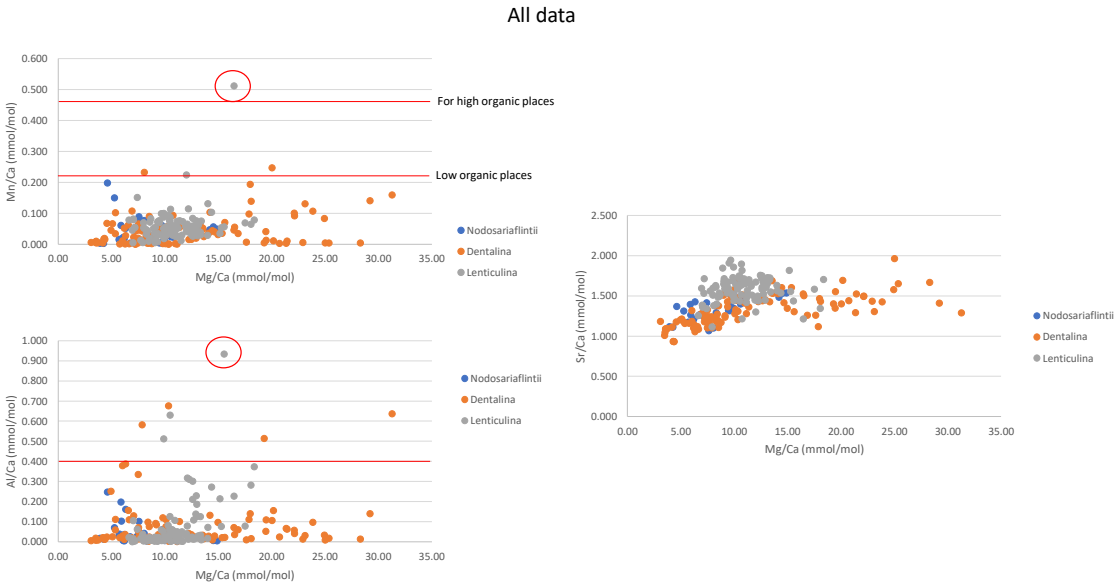

Figure S1: Correlations for Mn/Ca, Al/Ca, and Sr/Ca versus Mg/Ca for the three species analysed, and plotted against temperature and salinity.

Lenticulina calcar

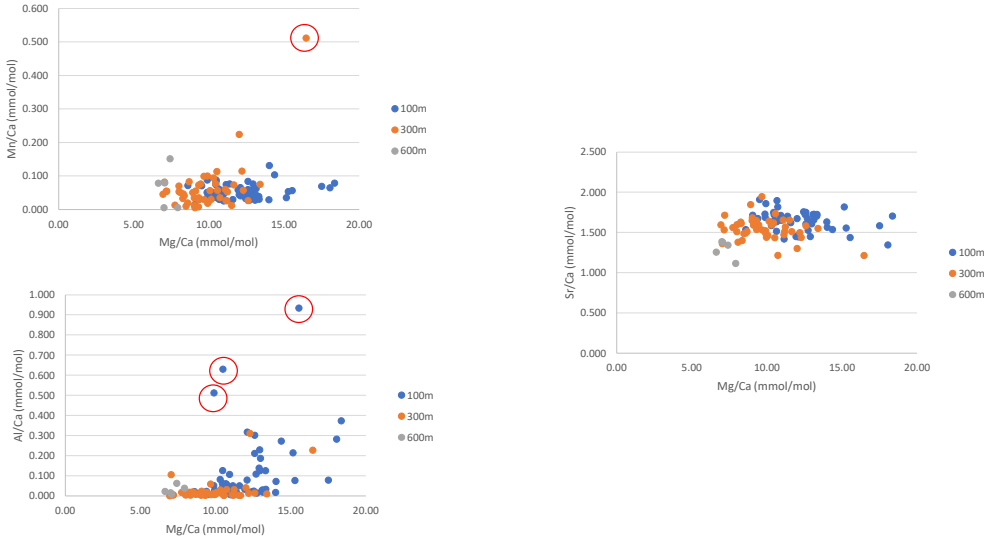

Figure S2: same variable plotted before, but in this case for the same species (*Lenticulina calcar*) to observe if there were correlations within the same depth.

Nodosaria flintii

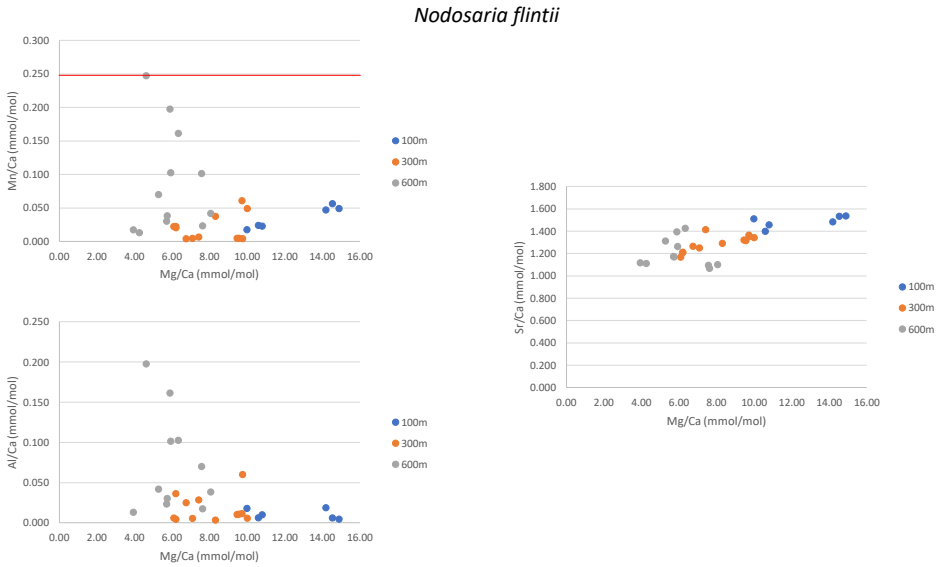

Figure S3: same variable plotted before, but in this case for the same specie (*Nodosaria flintii*) to observe if there were correlations within the same depth.

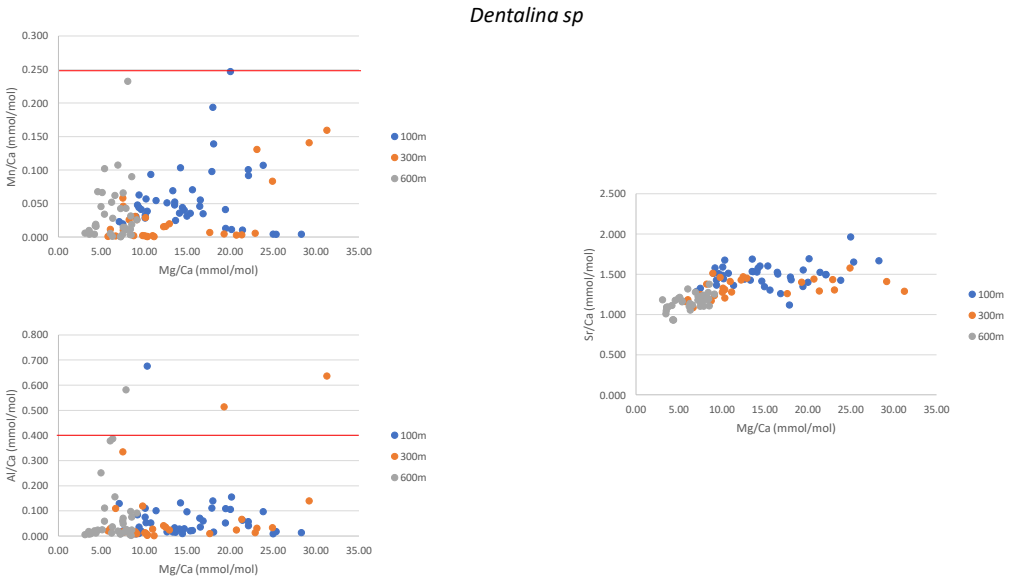

Figure S4: same variable plotted before, but in this case for the same specie (*Dentalina spp.*) to observe if there were correlations within the same depth.

2. Statistical analysis of the variability in El/Ca between species.

Depth (m) Mg/Ca	***Dentalina* spp. t-test**	***Lenticulina calcar* t-test**	***Nodosaria flintii* t-test**
104.7	p-value > 0.05	All living	p-value > 0.05
271.64	p-value < 0.05	All living	Non-living
618.8	p-value > 0.05	Non-living	Non-living
Depth (m) Na/Ca	***Dentalina* spp. t-test**	***Lenticulina calcar* t-test**	***Nodosaria flintii* t-test**
104.7	p-value > 0.05	All living	p-value > 0.05
271.64	p-value < 0.05	All living	Non-living
618.8	p-value < 0.05	Non-living	Non-living

Table S1: Variability between living (when there were rB foraminifera) and non-living foraminifera were grouped by depth for the three species plotted against temperature and salinity in the manuscript, using a t-test with different variances.

Depth (m)	*L. calcar* vs *L. denticulifera (t-test 2 tailed)* *Mg/Ca (mmol/mol)*	*L. calcar* vs *L. denticulifera (t-test 2 tailed)* *Na/Ca (mmol/mol)*
104.7	p-value < 0.05	p-value > 0.05
271.6	p-value > 0.05	p-value < 0.05

Table S2: Variability between 2 species from the same genus in their Mg/Ca and Na/Ca grouped by depth using a t-test with different variances.

3. Closest SEM pictures of the aperture of the foraminifera.

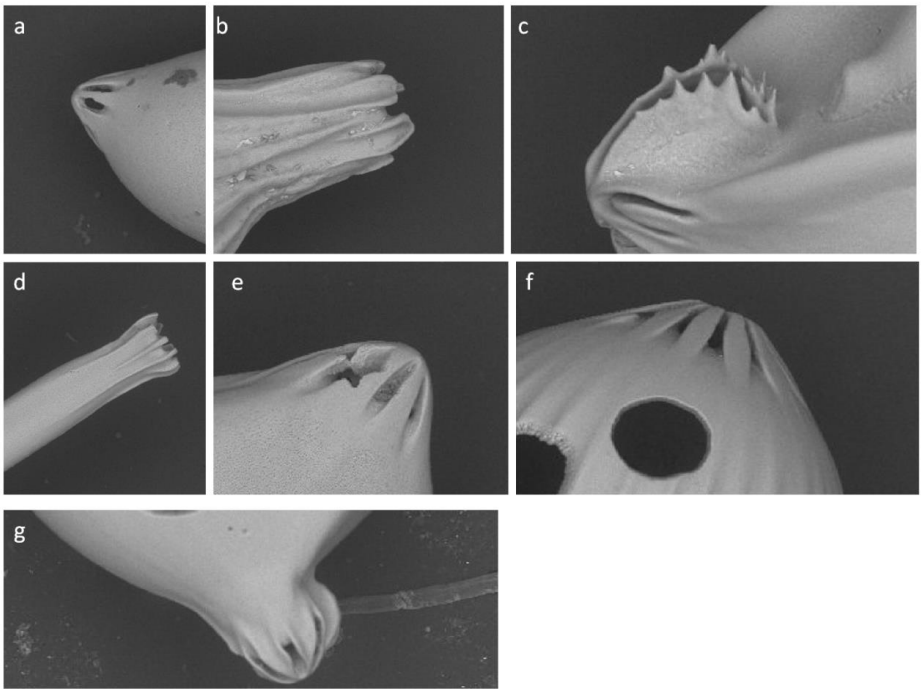

Figure S5: Closest picture of the aperture for some of the different specimens shown in the manuscript. (a): *Dentalina* spp.; (b) *Nodosaria flintii*; (c) *Lenticulina calcar*; (d) *Grigelis semirugosus;* (e) *Lenticulina denticulifera*; (f) *Pseudoglandulina comatula*; (g) *Vaginulinopsis baggi*.

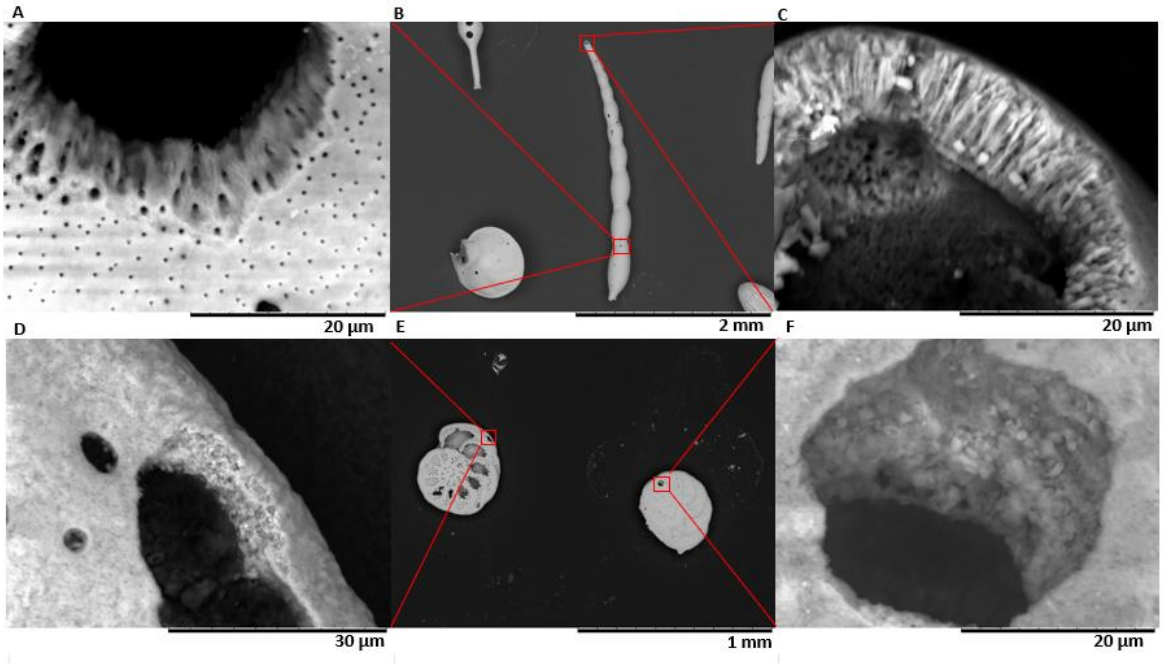

Figure S6: A, B, C *Dentalina* spp. (Nodosariida) A and C cross-section test structure; D, E, F *Planulina* sp. (Rotaliida), D and F, cross-section test structure.