

SUPPLEMENTARY INFORMATION

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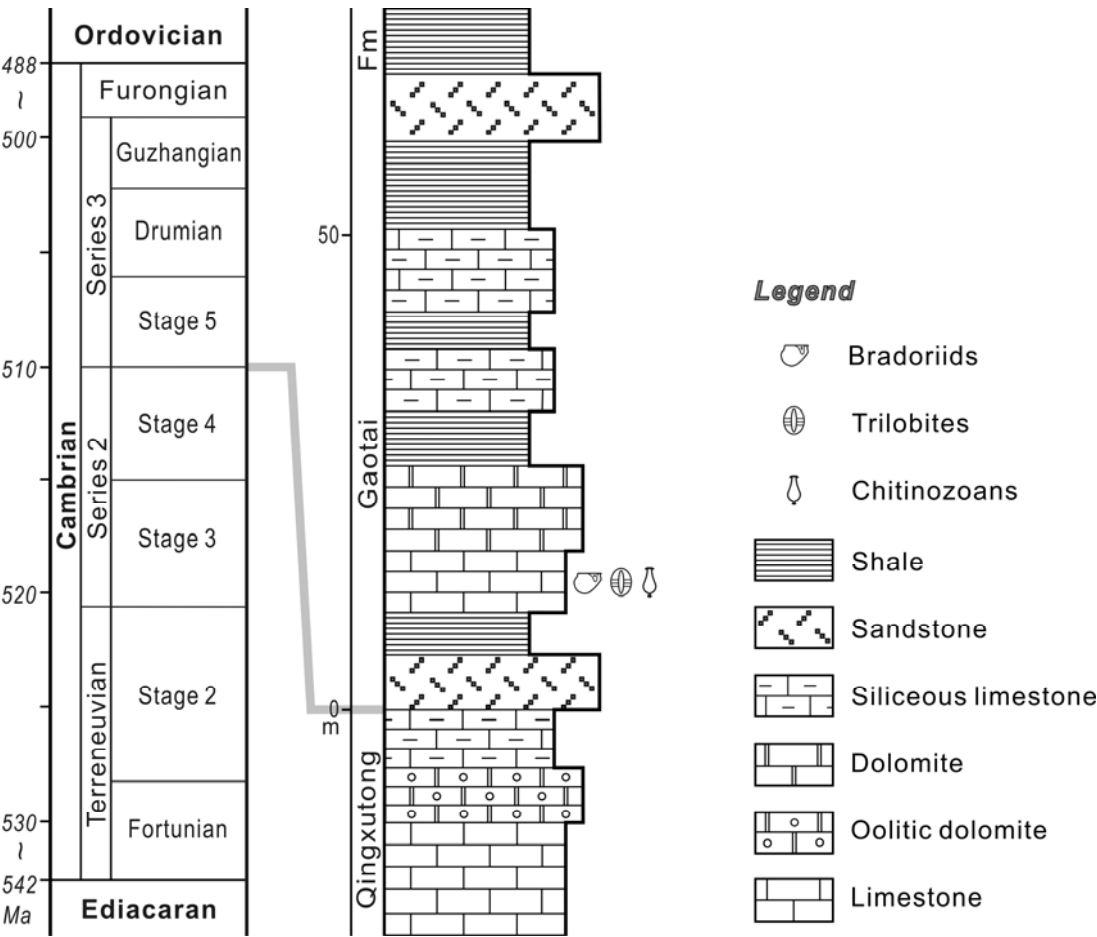


Figure DR1. Stratigraphic column measured from the outcrop near Balang village in Duyun, Guizhou, southern China.

SEM-EDX analysis

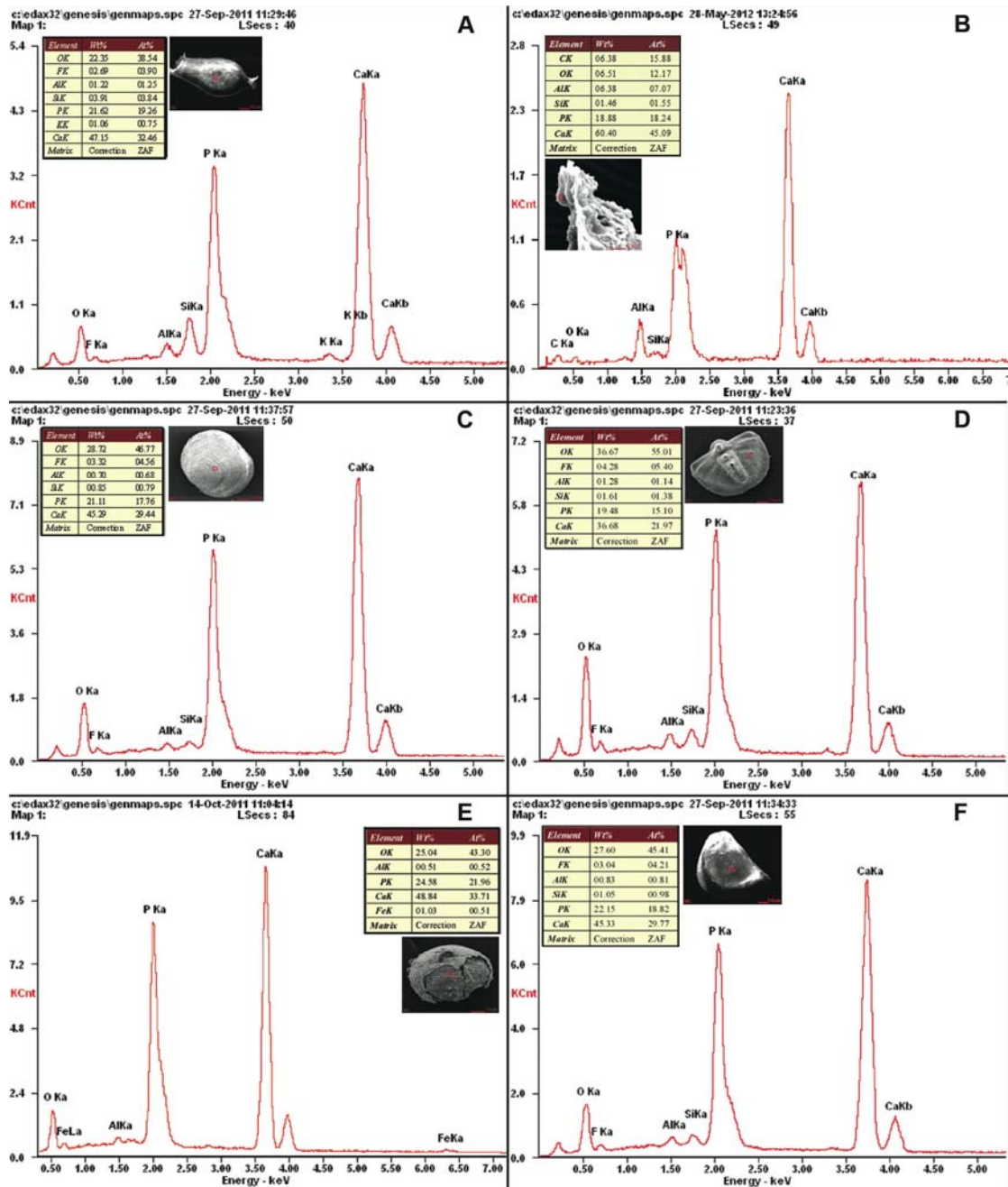


Figure DR2. SEM-EDX (Model: APOLLO X) analysis of chemical composition for Cambrian Stage 5 chitinozoans and associated fossils. Data determined from the red

rectangular areas; Wt%, percentage of weight; At%, percentage of atom. A and B: Chitinozoan *Eisenackitina?* sp. (YKLP 12002); A: Data determined from the surface of vesicle; B: From granule on the inner surface of copula; C: Lingulid brachiopod (YKLP 12004). D: Eodiscoid trilobite *Pagetides qianensis* (YKLP 12005). E: Scalidophoran embryo (YKLP 11983). F: Bradoriid *Hipponicharion qianensis* (YKLP 12006). As a result of phosphatization, little can be discerned of the original composition of these fossils, which, instead, display a composition dominated by calcium and phosphorus with small amounts of aluminium and silicon.