

Supplementary information

THE LARGEST KNOWN COWRIE AND THE ITERATIVE EVOLUTION OF GIANT CYPRAEID GASTROPODS

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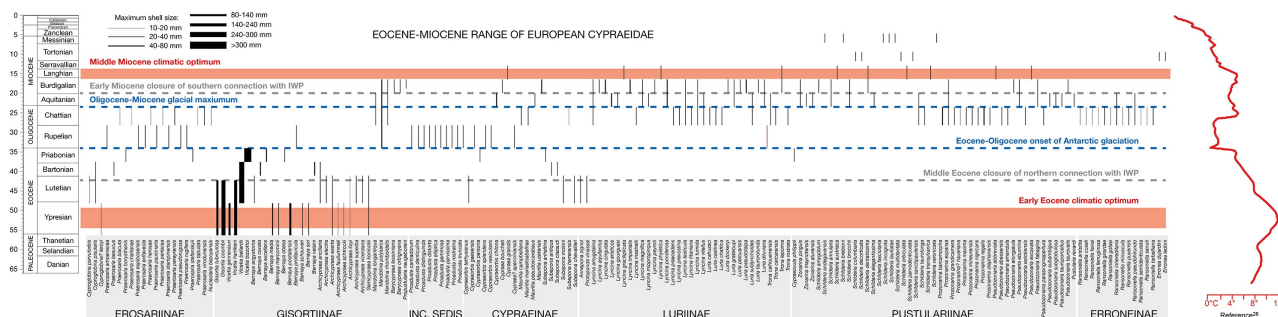
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Supplementary Information S11 We based “older *Zoila gigas*” in figs 3-4 on *Cypraea dorsata* Tate, 1890, collected in the Muddy Creek Marl and interpreted as a juvenile of *Zoila gigas* (McCoy, 1867) (specimen SAM T849¹, Fig. 13G-H; lower-middle Miocene²), and *Cypraea gabrieli* Chapman, 1912, also interpreted as a juvenile of *Z. gigas* (specimen P12366¹, Fig. 14A-B) from the Jan Juc Formation, collected at Bird Rock cliffs, Torquay (Australia, upper Oligocene³). These specimens differ from typical adults of *Zoila gigas*, (“younger *Zoila gigas*” in figs 3-4, based on specimens¹ in Figs 14D-E, 15) by the smaller size and shorter and less prominent anterior and posterior canals. Smaller specimens (L = 99-145 mm) are thus associated with older sediments (Oligocene-lower Miocene), whereas larger ones (up to 167-245 mm) are found in the Balcombian-Bairnsdalian^{1,4} corresponding to the upper Burdigalian-Serravallian⁵.

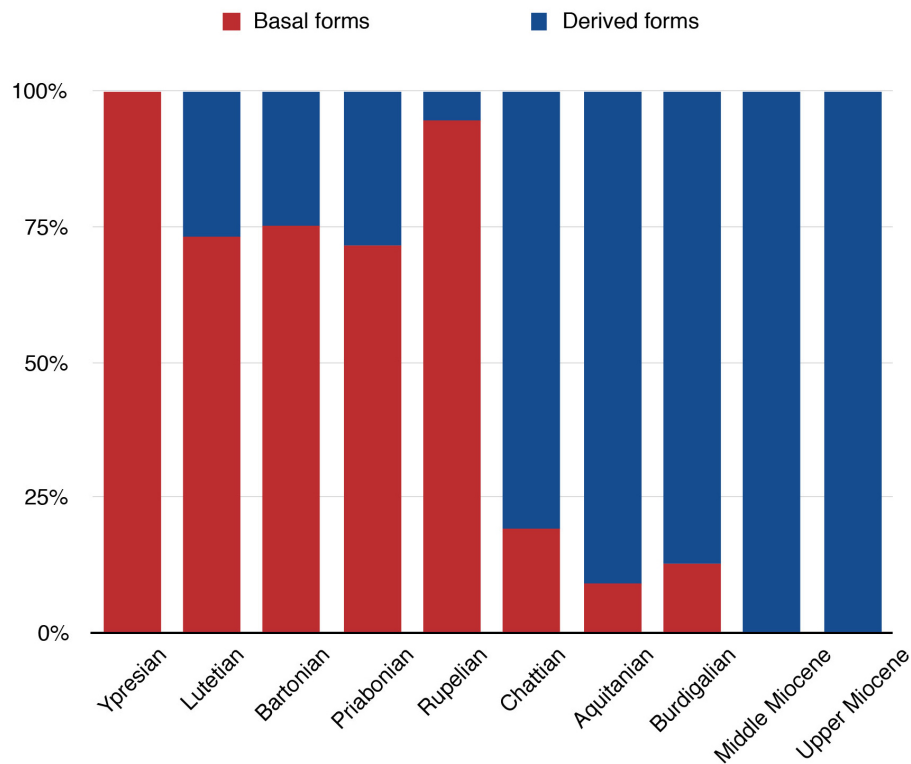
Supplementary Table SI2 Length (mm) of studied Gisortiinae specimens. Host institution and catalogue number indicated whenever possible (otherwise see references).

Species	Hosting institution	Catalogue number	Reference	Length (mm)
<i>Vicetia hantkeni</i>	Museo di Geologia e Paleontologia, Firenze	IGF 4499E	6	101
<i>Vicetia hantkeni</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.J05250	7	122
<i>Vicetia hantkeni</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.J03301	7	132
<i>Vicetia hantkeni</i>	Museo di Geologia e Paleontologia, Padova	MGP-PD 22083	8-10	99
<i>Vicetia hantkeni</i>	Museo di Geologia e Paleontologia, Padova	MGP-PD 32403	10-11	131
<i>Vicetia hantkeni</i>	Museo di Geologia e Paleontologia, Padova	MGP-PD 22082	11	154
<i>Vicetia hantkeni</i>	Museo di Geologia e Paleontologia, Padova	MGP-PD 1303R	Unpublished	189
<i>Vicetia hantkeni</i>	Museo di Geologia e Paleontologia, Padova	MGP-PD 1304R	Unpublished	93
<i>Vicetia hantkeni</i>	Unknown	[Coll. Cabassi]	8	160
<i>Vicetia hantkeni</i>	Museum National d'Histoire Naturelle, Paris	[Coll. Cossmann]	12-13	107
<i>Vicetia gennevauxi</i>	Unknown	[Lyon]	14-15	105
<i>Vicetia gennevauxi</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R64165	14-15	95
<i>Vicetia bellardii</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.A53140	13	180
<i>Vicetia bellardii</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.A47970	13,16	280
<i>Gisortia coombi</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R62966 [c]	15	273
<i>Gisortia coombi</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R11876 [c]	15	264
<i>Gisortia coombi</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.B70330	15	200
<i>Gisortia coombi</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R64617 [c]	15	193
<i>Gisortia coombi</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R64942	15	228
<i>Gisortia coombi</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R63200 [c]	15	178
<i>Gisortia coombi</i>	Museum National d'Histoire Naturelle, Paris	MNHN R64907 [c]	17	184
<i>Gisortia coombi</i>	Institut Royal des Sciences Naturelles de Belgique, Bruxelles	IRScNB C.I.6021	18	272
<i>Gisortia tuberculosa</i>	Natural History Museum, London	BMNH 47807	18-19	106
<i>Gisortia tuberculosa</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R63076	18	98
<i>Gisortia tuberculosa</i>	Museum National d'Histoire Naturelle, Paris	MNHN.F.R64636	18	121
Average length:				163

Supplementary Figures



Supplementary Figure SI3. Eocene-Miocene distribution of western Europe species of Cypraeidae. Occurrences were extended to the whole stage and, in cases of gaps, to intervening stages. When data on size were not available (a minority of cases), line thickness corresponds to the 20–40 mm size range. Subfamilies follow recent taxonomies^{21–23}: Erosariinae mainly includes species of *Praerosaria* and *Nucleolaria* (*Cyproglobina* included with doubt); Gisortiinae mainly includes species of *Gisortia*, *Vicetia*, *Bernaya*, *Archicypraea* and *Mandolina* (*Barycypraea* included with doubt); *Proadusta* is Incertae Sedis; Cypraeinae includes *Cypraeorbis* and *Mauritia* (*Subepona* could belong to the Erosariinae); Luriinae includes genera *Anepona*, *Protoponda*, *Lyncina*, *Luria* and *Trona*; Pustulariinae includes *Cypraeovula*, *Zonaria*, *Schilderia*, *Protozonaria*, *Pseudozonaria* and *Pustularia*; Erroneinae includes *Erronea* and, with doubt, *Ransoniella* (= *Plaziatia* Dolin & Lozouet, 2004). Data from France^{17–18,20,24–25}, Italy^{7,13,26} and Ukraine²⁷. Climatic events and temperatures from²⁸.



Supplementary Figure SI4. Western Europe per-stage cypraeid species richness expressed in percent of total, confronting basal Cypraeidae (subfamilies Erosariinae and Gisortinae) with derived forms (Cypraeinae, Luriinae, Pustulariinae and Erroneinae). Data as in SI3.

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