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Fossil Cenozoic crassatelline bivalves from Peru: New species and generic insights

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Discoveries of new fossil Cenozoic crassatellines in Peru provide a new phylogenetic perspective on "large" Neogene genera, in which four lineages are considered to have arisen independently from different Paleogene *Crassatella ancestors*. Latest Oligocene and early Miocene species of the new genus *Tilicrassatella* gen. nov.—*T. ponderosa, T. torrens* sp. nov., and *T. sanmartini* sp. nov. from the East Pisco Basin—probably evolved from the late Eocene species, *Crassatella rafaeli* sp. nov., which itself differed in significant respects from slightly older species of the East Pisco Basin, *C. neorhynchus* and *C. pedroi* sp. nov. The paciphilic genus, *Hybolophus* , is raised to full generic status. Added to its ranks are the East Pisco Miocene species *H. maleficae* sp. nov., *H. terrestris* sp. nov., and the oldest species of the genus, the late Eocene or Oligocene *H. disenum* sp. nov. from the Talara Basin of northern Peru. *Kalolophus* gen. nov., encompassing circum-Caribbean fossil species, the extant species, *K. speciosus*, and the trans-isthmus species, *K. antillarum*, appears to have evolved from the early Oligocene Floridian species, *Crassatella portelli* sp. nov. The genus *Marvacrassatella* is a western Atlantic Miocene lineage most likely descended from *Kalolophus*. The genus *Eucrassatella* is restricted to Australian and New Zealand taxa. The Eocene New Zealand species, *Spissatella media*, is transferred to *Eucrassatella* and deemed a candidate for the most recent common ancestor of younger *Eucrassatella* and all *Spissatella* species. In the southern Pacific Ocean, the circum-Caribbean region, and tropical western America, crassatelline lineages developed one or more of the following characters: large resilifers, smooth ventral margins, and an extended left anterior cardinal tooth. Some of these late Paleogene convergent character changes might have countered increased shear forces exerted on the crassatelline valves while burrowing into finer-grained and more cohesive sediments in deeper or quieter water.

Key words: Bivalvia, Crassatellidae, evolution, Florida, New Zealand, Peru.

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