

Designation of a neotype and paraneotype for *Conularina triangulata* (Raymond, 1905) (Upper Ordovician, eastern North America)

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Conularina triangulata (Raymond, 1905), the genotype of *Conularina* Sinclair, 1942, is a rare, early Late Ordovician conulariid (Cnidaria, Scyphozoa; Van Iten et al., 2006) having three sides or faces instead of four (Sinclair, 1942, fig. 9; Van Iten, 1992, text-fig. 3E). Originally described from the Valcour

Formation (early Sandbian; Dix et al., 2013) on Valcour Island, New York (Sinclair, 1942), *C. triangulata* has since been found in laterally equivalent strata of the upper Laval Formation ('Upper Chazy'; Sinclair, 1942) in Laval, Québec, Canada (Sinclair, 1942). From this same unit and area, Sinclair (1942) erected three new, four-sided species of *Conularina* (*C. irrasa*, *C. raymondi*, and *C. undosa*), and he erected a single four-sided species (*C. narrawayi*) from the Ottawa Formation (now the Sandbian–Katian Ottawa Group; Dix et al., 2013) at Tétréauville (now Gatineau), Québec. Subsequently, Jerre (1994) reported the occurrence of two species of *Conularina* in the Upper Ordovician of Sweden. Jerre (1994) also proposed that *Eoconularia? forensis* Sinclair, 1946 from the Upper Ordovician Citadelle Formation ('Quebec City' Formation; Sinclair, 1946) in Québec City, Québec (Promontoire de Québec thrust sheet, Appalachian Humber Zone, Allochthonous Domain; Castonguay et al., 2002) is a species of *Conularina*.

Unfortunately, the holotype specimen of *C. triangulata*, collected at 'Cystid Point' (Sinclair, 1942) on Valcour Island and reposit in the paleontological collections of the Carnegie Museum, Pittsburgh (CM 2099), has been lost (A. Kollar, personal communication, 2019). The specimen, illustrated by Raymond (1908, pl. 54, fig. 18) and Sinclair (1942, pl. 1, fig. 8), measured approximately 32 mm long and was truncated a short distance above the (former) apex. Also illustrated by Sinclair (1942, pl. 1, figs. 4–7, 9) is a smaller incomplete specimen of this species from the upper Laval Formation in Laval, Québec. This specimen, originally labeled as a hypotype, is housed in the National Collection of Invertebrate and Plant Type Fossils of the Geological Survey of Canada, Ottawa, under collection number GSC 17716. This specimen (Fig. 1) is herein designated as the neotype of *C. triangulata*, replacing the lost holotype. A second partial specimen, illustrated by Sinclair (1942, pl. 1, fig. 10) and numbered GSC 17717, is designated as a paraneotype. This specimen, an internal cast with corresponding external mold, is from the same rock unit and locality as the neotype. Curiously, the neotype now measures approximately 18 mm long, or about 7 mm shorter than shown in Sinclair's (1942) figures. Comparison with figures 6 and 7 in plate 1 of Sinclair (1942) indicates that the missing portion originally formed the apical-most part of the specimen. We suspect that at one time GSC 17716 consisted of two parts glued together along a fracture and that the smaller (apical-most) part has been lost.



Figure 1. *Conularina triangulata* (Raymond, 1905) from the upper Laval Formation, Upper Ordovician (Sandbian), Laval, Québec, Canada. View of one of the three faces of GSC 17716, the neotype (specimen oriented with its apertural end at the top of the figure). Scale bar = 10 mm.

Acknowledgments

We thank A. Kollar (Carnegie Museum, Pittsburgh) for notification of the status of the holotype of *Conularina triangulata* and K. Philips (Department of Biology, Western Kentucky University) and G. Mynhardt (Department of Biology, Hanover College) for photographing the neotype.

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Accepted: 21 December 2019