Supplementary Figure 1. Images of type specimens for synonymized *Neognathodus* species *N. medadultimus*/*N. medexultimus* and *N. dilatus*/*N. metanodosus*. Pairs are synonymized here to *N. medadultimus* and *N. dilatus*, respectively. All images are re-illustrated from previous studies. Scale bar represents one mm. Conodont element identification is fol­lowed by repository number (if available) and photo reference, stratigraphic unit and the county and state location.

A-H, *N. medadultimus* (Merrill 1972): A) oral view of holotype, OSU 28435 in Merrill, 1972, Pl. 1, fig. 6, from Putnam Hill Member of the Allegheny Formation, Stark County, Ohio; B) oral view of paratype, OSU 28430, in Merrill, 1972, Pl. 1. fig. 4, from Putnam Hill Member of the Allegheny Formation, Perry County, Ohio; C) oral view of paratype, OSU 28433, in Merrill, 1972, Pl. 1. fig. 5, from Putnam Hill Member of the Allegheny Formation, Tuscarawas County, Ohio; D) lateral view of paratype, OSU 28436, in Merrill, 1972, Pl. 1. fig. 7, from Putnam Hill Member of the Allegheny Formation, Mahoning County, Ohio; E) oral view of paratype, formally holotype of *N. medexultimus*, OSU 28444, in Merrill, 1972, Pl. 2. fig. 23, from Vanport Member of the Allegheny Formation, Beaver County, Pennsylvania; F) lateral view of paratype, formally paratype of *N. medexultimus*, OSU 28440, in Merrill, 1972, Pl. 2. fig. 22, from Vanport Member of the Allegheny Formation, Muskingum County, Ohio; G) oral view of paratype, formally paratype of *N. medexultimus*, OSU 28442, in Merrill, 1972, Pl. 2. fig. 25, from Vanport Member of the Allegheny Formation, Beaver County, Pennsylvania; H) oral view of paratype, formally paratype of *N. medexultimus*, OSU 28437, in Merrill, 1972, Pl. 2. fig. 26, from Vanport Member of the Allegheny Formation, Vinton County, Ohio.

I-M, *N. dilatus* (Stauffer and Plummer 1932): I) oral view of lectotype, repository number not assigned, Stauffer and Plummer, 1932, Pl. 4, fig. 10, from East Mountain Shale Member, Mineral Wells Formation, Palo Pinto County, Texas; J) lateral view of lectotype, repository number not assigned, Stauffer and Plummer, 1932, Pl. 4, fig. 11, from East Mountain Shale Member, Mineral Wells Formation, Palo Pinto County, Texas; K) oral view of paratype, repository number not assigned, Stauffer and Plummer, 1932, Pl. 4, fig. 13, from East Mountain Shale Member, Mineral Wells Formation, Palo Pinto County, Texas; L) basal view of paratype, repository number not assigned, Stauffer and Plummer, 1932, Pl. 4, fig. 14, from East Mountain Shale Member, Mineral Wells Formation, Palo Pinto County, Texas; M) oral view of paratype, formally *N. metanodosus* holotype, ISGS 61P56, Merrill, 1975 Fig. 1C, from Exline Member of the Lonsdale Formation, Mercer County, Illinois.