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A new genus of Triassic discinid brachiopod and re-evaluating the taxonomy of the group—evolutionary insights into autecological innovation of post-Palaeozoic discinids

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The discinid brachiopod from the Lower Triassic Osawa Formation in the Southern Kitakami Terrane, Japan, exhibited a unique morphological combination of a narrow pedicle track (listrium) and a V-shaped large depressed area, thereby suggesting an intermediate form between the Palaeozoic *Orbiculoidea* and the extant *Discinisca*. Based on these characteristics, we propose *Bronzoria recta* gen. et sp. nov., a genus that appeared in the late Permian and was widely distributed during the Triassic period. Morphological analysis of extant discinids revealed that the pedicle area showed an arrowhead-shaped median plate and a pair of semilunar plates, equivalent to the inner and outer listrial plates of Palaeozoic-type discinids, respectively. Consequently, there are great differences in the development of the pedicle area, i.e., the large pedicle area of extant discinids is suitable for robust pedicle attachment, whereas the narrow pedicle area of *Bronzoria* gen. nov. suggests a free-lying mode of life. Given the relationship between pedicle-related structures and the mode of life, we hypothesised that the evolution of the large depressed area preceded the development of the pedicle area. Subsequently, the large depressed area accommodated a larger pedicle, facilitating an autecological innovation for pedicle attachment, as observed in extant species.

Key words: Brachiopoda, Linguliformea, Discinidae, *Orbiculoidea* , *Discinisca* , exaptation, living fossil, stabilomorph, Olenekian, Triassic.

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