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A Re-description of *Ditrupa gracillima* Grube, 1878 (Polychaeta, Serpulidae) from the Indo-Pacific, with a Discussion of the Genus

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ABSTRACT. Like so many other serpulid genera, *Ditrupa* has a history of taxonomic confusion, even to the extent that the worm tubes have been included in the Mollusca by some workers. In recent publications, most authors follow Fauvel (e.g. 1953) and recognise a single species, *Ditrupa arietina* O.F. Müller, 1776, worldwide, despite the fact that descriptions of this species were based on European and Atlantic material. A re-examination of type specimens and study of a broad range of samples from the Indo-Pacific now justifies the recognition of a separate species, *Ditrupa gracillima* Grube, 1878, from this region. It shows extreme variation, at least partly related to depth: from 100 m downwards an ecophenotype prevails, previously described as *D. arietina* var. *monilifera*.

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Ditrupa Berkeley, 1835 is a genus of serpulid polychaete found living unattached in soft sediment marine environments around the world. The worms are clearly recognisable from other serpulids by their anatomy, behaviour and distinctive tusk-shaped tubes. Despite this, most descriptions are poor, having been based solely on dredged calcareous tubes, most often devoid of the polychaete. The worms and their tubes can form a significant component of the muddy benthic community. In the Atlantic, *Ditrupa* is sometimes found in populations of over 1000/m^2 (Dyer *et al.*, 1982:310) and may account for more than 50% of the biogenic carbonate sediments (Wilson, 1979:M87). Fossil *Ditrupa* may be so abundant that they are used as key beds for geological field work, and to deduce the direction of prevalent palaeocurrents (Cheng, 1974). Although a number of Recent species has been erected in the past, most authors currently follow Fauvel (e.g. 1953:470), who recognises only a single species, *Ditrupa arietina*, worldwide.

There has always been considerable confusion in the classification of *Ditrupa* (sometimes spelled *Ditrypa*). In the 18th and 19th centuries particularly, as well as more recently, species were misidentified as the scaphopod genus *Dentalium* Linnaeus, 1758 and vice versa. For