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TITLE: Abyssal fauna of polymetallic nodule exploration areas, eastern Clarion-Clipperton Zone, central Pacific Ocean: Annelida: Capitellidae, Opheliidae, Scalibregmatidae, and Travisiidae

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ABSTRACT:

We present DNA taxonomy of abyssal polychaete worms from the eastern Clarion-Clipperton Zone (CCZ), central Pacific Ocean, using material collected as part of the Abyssal Baseline (ABYSSLINE) environmental survey cruises 'AB01' and 'AB02' to the UK Seabed Resources Ltd (UKSRL) polymetallic nodule exploration contract area 'UK-1', the Ocean Mineral Singapore exploration contract area 'OMS-1' and an Area of Particular Environmental Interest, 'APEI-6'. This is the fourth paper in a series to provide regional taxonomic data with previous papers reporting on Cnidaria, Echinodermata and Mollusca. Taxonomic data are presented for 23 species from 85 records within four polychaete families: Capitellidae, Opheliidae, Scalibregmatidae and Travisiidae, identified by a combination of morphological and genetic data, including molecular phylogenetic analyses. Two taxa (genetically separated from one another) morphologically matched the same known cosmopolitan species, Ophelina abranchiata that has a type locality in a different ocean basin and depth from where no genetic data was available. These two species were assigned the open nomenclature 'cf.' as a precautionary approach in taxon assignments to avoid over-estimating species ranges. Twelve (12) taxa are here described as new species, Ammotrypanella keenanisp. nov., Ammotrypanella kerstenisp. nov., Ophelina curlisp. nov., Ophelina ganaesp. nov., Ophelina juhazisp. nov., Ophelina martinezarbizuisp. nov., Ophelina meyeraesp. nov., Ophelina nunnallyisp. nov., Oligobregma brasieraesp. nov., Oligobregma tanisp. nov., Oligobregma whaleyisp. nov. and Travisia ziegleraesp. nov. For the remaining nine taxa, we have determined them to be potentially new species, for which we make the raw data, imagery and vouchers available for future taxonomic study. The CCZ is a region undergoing intense exploration for potential deep-sea mineral extraction from polymetallic nodules. We present these data to facilitate future taxonomic and environmental impact study by making both data and voucher materials available through curated and accessible biological collections.

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