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TITLE: Abyssal fauna of the UK-1 polymetallic nodule exploration area, Clarion-Clipperton Zone, central Pacific Ocean: Mollusca

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ABSTRACT:

We present the first DNA taxonomy publication on abyssal Mollusca from the Clarion-Clipperton Zone (CCZ), central Pacific ocean, using material collected as part of the Abyssal Baseline (ABYSSLINE) environmental survey cruise 'AB01' to the UK Seabed Resources Ltd (UKSRL) polymetallic-nodule exploration area 'UK-1' in the eastern CCZ.This is the third paper in a series to provide regional taxonomic data for a region that is undergoing intense deep-sea mineral exploration for high-grade polymetallic nodules.Taxonomic data are presented for 21 species from 42 records identified by a combination of morphological and genetic data, including molecular phylogenetic analyses.These included 3 heterodont bivalves, 5 protobranch bivalves, 4 pteriomorph bivalves, 1 caudofoveate, 1 monoplacophoran, 1 polyplacophoran, 4 scaphopods and 2 solenogastres.Gastropoda were recovered but will be the subject of a future study.Seven taxa matched published morphological descriptions for species with deep Pacific type localities, and our sequences provide the first genetic data for these taxa.One taxon morphologically matched a known cosmopolitan species but with a type locality in a different ocean basin and was assigned the open nomenclature 'cf' as a precautionary approach in taxon assignments to avoid over-estimating species ranges.One taxon is here described as a new species, Ledella knudseni sp.n.For the remaining 12 taxa, we have

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