ACTA PALAEONTOLOGICA POLONICA

Early Tremadocian cephalopods from Santa Rosita Formation in NW Argentina: the oldest record for South America

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Acta Palaeontologica Polonica 68 (4), 2023: 583-601 doi:10.4202/app.01103.2023

We describe early Tremadocian (*Kainella meridionalis* Biozone) cephalopods from the Cordillera Oriental, Jujuy, NW Argentina. They consist of numerous small specimens collected at the Quebrada de Arenal, Trancas section, near the town of Tilcara, in the Alfarcito Member of the Santa Rosita Formation. All but three specimens were assigned to a new species of *Ellesmeroceras* (Family Ellesmeroceratidae), *E. humahuacaensis* sp. nov., based on its slightly endogastric curvature, the characteristics of the siphuncle and chambers dimensions. Micro CT scanning of one specimen aided in the description of the apex and facilitated the construction of a 3D model of the species. A single, similar specimen was assigned to *Ellesmeroceras* sp. pending the availability of additional material. Two specimens differ from the rest, being exogastric with a lower angle of expansion. They are tentatively assigned to *Basslerоceras* sp. This material indicates that Cambrian and early Tremadocian cephalopods are not as different as previously thought. “Diversification” and “extinction” events during the late Cambrian may be attributed to taxonomic “over-splitting” and taphonomic and/or sampling biases, respectively. These specimens are currently the oldest recorded in the Central Andean Basin and of West Gondwana, and probably represent the first migration of cephalopods into the region, when the water column was still poorly colonized. During the middle Tremadocian, subsequent immigrations and originations of several cephalopod orders accounted for a rise in diversity and expansion into new niches during this interval. Some of these taxa persisted into the middle Floian, at which time, a second increase in diversity is recorded. *Ellesmeroceras humahuacaensis* sp. nov. is interpreted as a sub-vertical nektobenthic organism.

Key words: Cephalopoda, Ellesmeroceratidae, *Ellesmeroceras* , stem cephalopods, Tremadocian, Ordovician, Santa Rosita Formation, Cordillera Oriental.

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