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SHORT COMMUNICATION

A JUVENILE PLESIOSAUR FROM THE PLIENSBACHIAN (LOWER JURASSIC) OF ASTURIAS, SPAIN

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Mesozoic marine reptiles are poorly known in Spain (see Quesada et al., 1998 for a bibliography). Up to now, the plesiosaur record of Spain consisted only of fragmentary remains coming from the Jurassic of Asturias (Schulz, 1858; Ruiz-Omeñaca et al., 2006) and the Cretaceous of the Basque Country and Castellón (Bardet et al., 1999a; Yagüe et al., 2003).

The Asturias record includes (1) an historical nineteenth century specimen (now lost)—one of the oldest fossil reptiles from Spain—briefly mentioned as "part of a skeleton and paddles of a plesiosaur, which largest vertebrae reach a diameter of 6 cm, found in Lower Jurassic rocks (most probably Rodiles Formation, Pliensbachian, J. C. G.-R. pers. obs.), between the localities of El Puntal and Tazones in Villaviciosa" (Schulz, 1858:108). Unfortunately, no figure was provided and we have no definitive certitude about the plesiosaurian affinities of this specimen. (2) isolated remains from the Lower Jurassic (Hettangian-Sinemurian; Gijón Formation) and Upper Jurassic (Kimmeridgian; Tereñes Formation) of the same area (Ruiz-Omeñaca et al., 2006).

Here we report on the discovery of an immature plesiosaur from the Pliensbachian of Asturias. It is the most complete plesiosaur specimen found in Spain, one of the very few juvenile plesiosaurs known worldwide, and an additional specimen from the very poor Pliensbachian fossil record.

Institutional Abbreviations—**MUJA**, Museo del Jurásico de Asturias (Colunga, Spain); **SMNS**, Staatliches Museum für Naturkunde Stuttgart (Germany).

GEOLOGICAL BACKGROUND

The plesiosaur specimen was found in the Santa Mera cliffs, near Villaviciosa in Asturias, Northern Spain (Fig. 1A). As with most of the Mesozoic vertebrate remains and trackways from Asturias (García-Ramos and Gutiérrez-Claverol, 1995; García-Ramos et al., 2002, 2004), the plesiosaur specimen was unearthed at the foot of sea cliffs. The hard and dark matrix with pyrite in which the fossil is imbedded is part of the Santa Mera Member, Rodiles Formation (Valenzuela et al., 1986) of lower Pliensbachian age (*Jamesoni* Zone; Suárez Vega, 1974) (Fig. 1B). The Santa Mera Member of the Rodiles Formation consists of alternating limestones and dark marls, indicating an outer carbonate ramp environment (García-Ramos et al., 2004). The region was part of an epeiric seaway that connected the northern interior Boreal sea to the southern Tethyan Ocean (Aurell et al., 2003; Robles et al., 2004). This specimen was probably exposed for a long time and could correspond to vertebrate remains (referred to as ichthyosaur) from the same locality and horizon previously mentioned by Suárez Vega (1974).

SYSTEMATIC PALEONTOLOGY

SAUROPTERYGIA Owen, 1860
PLESIOSAURIA de Blainville, 1835
PLESIOSAUROIDEA (Gray, 1825) Welles, 1943
Gen. et sp. indet.
(Fig. 2, Table 1)

Referred Material

MUJA 0518, incomplete juvenile skeleton, preserved in five blocks (MUJA 0518a-e) and isolated elements (MUJA 0518f-m) (Fig. 2, Table 1) from Santa Mera near Villaviciosa, Asturias, Northern Spain; Santa Mera Member, Rodiles Formation, lower Pliensbachian age (*Jamesoni* Zone).

Description

Preservation—The specimen is preserved in five blocks (MUJA 0518a-e). Some elements were recovered free of matrix (MUJA 0518f-m), probably due to sea wave erosive action. Eight vertebral centra including three cervicals, two pectorals and three dorsals, seven neural arches, sixteen ribs and eight gastralia, one humerus, one incomplete femur, one pubis, one ilium and three additional indeterminate bones (possibly the other ilium and two epipodial bones) have been recovered. Based on their size and proportions, it can be reasonably assumed that all these bones come from the same individual.

Ontogenetic Stage of Development—The small size of the specimen (vertebral centra about 3 cm long), its poor degree of ossification with neural arches and ribs not fused to centra, almost flat vertebral articular surfaces, and propodials with poorly defined extremities, tuberosity/trochanter and rugosities, suggest that it was a juvenile (*sensu* Brown, 1981). Curiously, the Asturias specimen lacks other typical juvenile characters such as deep V-shaped neuro-central lateral suture, low dorsal neural spines and semi-lunate pubis (Brown, 1981; Storrs, 1995, 1997). The size of the specimen indicates it was a young (estimated body length about 1.8 m) but not a neonate individual.

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