

## CRETACEOUS PLESIOSAURS FROM THE NEUQUÉN BASIN, WEST-CENTRAL ARGENTINA: AN UPDATED PICTURE OF OCCURRENCES AND PALAEOBIOGEOGRAPHICAL AFFINITIES

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Cretaceous plesiosaurs from the Neuquén Basin, Argentina, have been abundantly recorded from different marine and marginal marine units. However, records from the Early Cretaceous are still scarce and poorly known in contrast to Late Cretaceous ones. Early Cretaceous plesiosaurs include elasmosaurids recorded from the Agrio Formation, encompassing the Valanginian-Hauterivian time interval. These materials include scattered postcranial elements, but they have been precisely dated by means of the associated ammonoid faunas. Specimens show two different taphonomic modes: 1] preservation embedded in dark-grey shales that consists of partially articulated postcranial skeletons found in situ and interpreted as a result of the sinking of dead vertebrate carcasses to a muddy and calm seafloor under oxic to suboxic conditions without further transport or reworking, and 2] isolated bones in shell beds that are weathered, abraded and heavily encrusted by small cementing oysters resulted from the reworking of previously settled vertebrate carcasses on the seafloor. Specimens from the Agrio Formation share features with the Aptian *Callawayasaurus colombiensis* of Colombia and the Aptian-Albian of Australia, and indeterminate elasmosaurids from the Albian of Canada and the Berriasian-late Albian of England such as elongated cervical vertebrae, and absence of dumbbell shaped articular faces. The presence of a marked lateral ridge is not frequent among the elasmosaurids cervical vertebrae of the Agrio Formation but it has been recorded among the Aptian-Albian Australian elasmosaurids. Elasmosaurids from the Agrio Formation show a complex of plesiomorphic (absence of ventral notch; circular articular faces) and apomorphic (elongated cervical vertebrae; lateral ridge, in one case) features. Elasmosaurids from the Agrio Formation differ markedly from the elasmosaurids recorded in the late Campanian-early Maastrichtian Allen and late Maastrichtian Jagüel formations of the same basin. These younger forms show apomorphic features (dumbbell shaped articular faces) and include both the endemic Weddellian aristonectinae and non-aristonectinae elasmosaurids.

