

THE VERTEBRATES FROM THE ARCILLAS DE MORELLA FORMATION (LOWER APTIAN) OF MORELLA, SPAIN

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Although palaeontological activity in the region of Els Ports (Castellon, Spain), and specifically in Morella, began in the nineteenth century, in recent years it has been revitalized by systematic excavations and also by a palaeontological control in the quarries of clay. In this way, new fossil-sites have been found in continental and transitional deposits of the Arcillas de Morella Formation, lower Aptian in age. It has been obtained abundant information about the fauna and flora including dinosaurs that lived in the area, and about the ecosystems in which they lived.

As a result of all this palaeontological activity, it has been recognized a high diversity of vertebrates in the Arcillas de Morella Formation. The association is composed by common cranial and postcranial element of, at least, four bony fishes taxa assigned to Semionotiformes, Pycnodontiformes, Ichthyodectiformes and Folidoforiformes; sharks closely related to Hybodontiformes; amphibians identified by their postcranial bones. It have been also found appendicular and cranial bones, shells and isolated plates of turtles, assigned to the solemidid *Helochelydra*, to a new eucryptodiran turtle and, at least, to other two taxa. Squamates are scarcely represented by several vertebras. It is also frequent different morphotypes of teeth and vertebrae of plesiosaurs, some of them attributed to Elasmosauridae. Isolated teeth can be attributable to undetermined Pterosaurs. Other common remains are cranial bones, teeth and postcranial bones of crocodiles, represented by the atoposaur *Theriosuchus* and by the neosuchian *Goniopholis* and *Bernissartia*. However, the group best represented in abundance and diversity is that of dinosaurs. Several groups have been achieved: theropods (*Theropoda* indet., *Tetanurae* indet., *Megalosauridae* indet., *Coelurosauridae* indet., *Spinosauridae* indet., *Allosauroidea* indet.,

Dromeosauridae indet.), sauropods (Sauropoda indet., Titanosauriformes indet., Brachiosauridae indet.), thyreophors (Ankylosauria indet., *Polacanthus* sp.) and ornithopods (Hypsilofodontidae indet., cf. *Hypsilophodon* sp., “Iguanodontidae” indet., *Iguanodon* sp., *I. cf. bernissartensis*, *I. bernissartensis*). Iguanodontid ornithopods are the best represented showing a great morphological variability. Although within this group the bones assigned to *Iguanodon* are the most abundant, a few isolated elements can also be attributed to *Mantellisaurus*.

The abundance and the diversity of discovered remains allow us to recognize affinities and differences between the vertebrate faunas of the Arcillas de Morella and the synchronous deposits of the European “wealden facies”.

Keywords: Vertebrates, Dinosauria, Arcillas de Morella Formation, Lower Aptian