



diversity



Special Issue Reprint

Making New Out of the Old

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This Special Issue aims to present recent biological advances made in research on Mesozoic Marine Reptiles, which include the most iconic and largest predators of their time, mirroring terrestrial dinosaurs. Through the study of exceptionally preserved specimens and/or the use of innovative methods, the authors shed light on several biological and ecological aspects that were previously inaccessible by conventional studies. The endocranial morphology of mosasaur is revealed by 3D micro-computed tomography (Parámo-Fonseca et al.; Allemand et al.), and their alimentation patterns (permitting to infer niche partitioning and food preferences) are approached using various proxies applied to their teeth, such as 3D morphometric analyses (Bardet et al.), microstructural analyses (Holwerda et al.), and carbon isotopic geochemistry (Polcyn et al.). Locomotion capabilities and swimming performances are addressed by studying fin evolution using anatomical networks in ichthyosaurs (Fernández et al.) and neck and vertebrae elongation patterns in plesiosaurs (O’Gorman). Soft tissue (skin and colour) of ichthyosaurs is highlighted by a combination of molecular and imaging techniques (Bonnevier Wallstedt et al.). Finally, a complete systematic and anatomical revision of Jurassic ichthyosaurs, plesiosaurs, and thatatotsuchians faunas from Russia reveals their astonishing richness and diversity (Zverkov et al.).



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