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Nota di contenuto	Sauropod biology and the evolution of gigantism: what do we know? / Marcus Clauss -- Sauropod feeding and digestive physiology / Jurgen Hummel and Marcus Clauss -- Dietary options for the sauropod dinosaurs from an integrated botanical and paleobotanical perspective / Carole T. Gee -- The diet of sauropod dinosaurs: implications of carbon isotope analysis on teeth, bones, and plants / Thomas Tutken -- Structure and function of the sauropod respiratory system / Steven F. Perry, Thomas Breuer, and Nadine Pajor -- Reconstructing body volume and surface area of dinosaurs using laser scanning and photogrammetry / Stefan Stoinski, Tim Suthau, and Hanns-Christian Gunga -- Body mass estimation, thermoregulation, and cardiovascular physiology of large sauropods / Bergita Ganse ... [et al.] -- How to get big in the Mesozoic: the evolution of the sauropodomorph body plan / Oliver W.M. Rauhut ... [et al.] -- Characterization of sauropod bone structure / Maitena Dumont ... [et al.] -- Finite element analyses and virtual syntheses of biological structures and their application to sauropod skulls / Ulrich Witzel ... [et al.] -- Walking with the shoulder of giants: biomechanical conditions in the tetrapod shoulder girdle as a basis for sauropod shoulder reconstruction / Bianca Hohn -- Why so huge?: biomechanical reasons for the acquisition of large size in sauropod and theropod dinosaurs / Holger Preuschoft ... [et al.] -- Plateosaurus in 3D: how CAD models and kinetic-dynamic modeling

bring an extinct animal to life / Heinrich Mallison -- Rearing giants: kinetic-dynamic modeling of sauropod bipedal and tripodal poses / Heinrich Mallison -- Neck posture in sauropods / Andreas Christian and Gordon Dzemski -- The life cycle of sauropod dinosaurs / Eva Maria Griebeler and Jan Werner -- Sauropod bone histology and its implications for sauropod biology / P. Martin Sander ... [et al.] -- Skeletal reconstruction of Brachiosaurus brancai in the Museum fur Naturkunde, Berlin: summarizing 70 years of sauropod research / Kristian Remes ... [et al.].

Sommario/riassunto

Sauropods, those huge plant-eating dinosaurs, possessed bodies that seem to defy every natural law. What were these creatures like as living animals and how could they reach such uniquely gigantic sizes? A dedicated group of researchers in Germany in disciplines ranging from engineering and materials science to animal nutrition and paleontology went in search of the answers to these questions. Biology of the Sauropod Dinosaurs reports on the latest results from this seemingly disparate group of research fields and integrates them into a coherent theory regarding sauropod gigantism. Covering