

**THE ORNITHOSAURIA: AN ELEMENTARY
STUDY OF THE BONES OF PTERODACTYLES,
MADE FROM FOSSIL REMAINS FOUND
IN THE CAMBRIDGE UPPER GREENSAND, AND
ARRANGED IN THE WOODWARDIAN MUSEUM
OF THE UNIVERSITY OF CAMBRIDGE**

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The Ornithosauria: An Elementary Study of the Bones of Pterodactyles, Made from Fossil Remains Found in the Cambridge Upper Greensand, and Arranged in the Woodwardian Museum of the University of Cambridge by Harry Govier Seeley

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HARRY GOVIER SEELEY

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BY

HARRY GOVIER SEELEY,

OF ST JOHN'S COLLEGE, CAMBRIDGE.



WITH TWELVE PLATES.

"And when the appointed end comes, they lie not dishonoured in
forgetfulness."—XENOPH. *Memor.* Book 2, c. 1, § 88.

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P R E F A C E.

THIS memoir is a portion of the Catalogue of the Woodwardian Museum which has been made at Professor Sedgwick's request and at his cost. When the Professor laid upon me his commands to prepare a Catalogue of the Museum, it was planned in three distinct works. First, a series of indexes to the specimens in the great divisions into which the Museum is arranged; secondly, a series of memoirs upon the orders and classes of animals concerning which new knowledge is given by fossils in the Museum; and, thirdly, memoirs descriptive of those species contained in the arranged collections which are at present unknown in scientific writings.

For the convenience of students the Catalogue is made in parts. The Syndics of the University Press printed last autumn as an example of the "Indexes to the Museum," an Index to the Pterodactyles, Birds, and Reptiles from the Secondary Strata. And this memoir is an example of the second kind of Catalogue, which explains the structures of the Pterodactyles of the Cambridge Greensand. In its pro-

gress questions have arisen which necessitated an examination both of the method of research in comparative anatomy and of its results in classification. And in so far as the views here advanced differ from those commonly taught, the discrepancy is due to the writer's imperfect faith in the results of the inductive method of research, as commonly used by modern writers on Palæontology. It has not been consistent with the plan of this little work to do more than scatter through it a few hints upon method, a subject which will more fitly be discussed with a part of the Catalogue which forms a synopsis of the osteology of the fossil animals usually named Reptiles. The views here urged have however but little of novelty. The name Ornithosauria was proposed by the distinguished naturalist Prince Charles Bonaparte in 1838. The group as an order was recognized by Von Meyer in 1830. The affinities of the brain appear to have been detected by Oken, and the bird-like character of the respiratory system was expounded by Von Meyer. And most of whatever this memoir contains has been already thought or discovered by the German philosophers, who have had the Pterodactyles as fossils of their fatherland, though my own conclusions were arrived at separately and from different materials.

The oldest Ornithosaurians are from the Muschelkalk of Germany. In England the oldest are from the Lias,—several species of *Dimorphodon*—a genus in some respects nearly resembling the Pterosaurians of the Cambridge Upper Greensand. In the Oolite of Stonesfield are several species of *Rhamphorhynchus* or a similar genus. The great Pelolithic period from the Oxford Clay to the Kimeridge Clay, has yielded in its several divisions small Pterodactyles of