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A gifted yet controversial anatomical teacher, Robert Knox (1791–1862) published this remarkable study in 1852. It explores the influence of anatomy on evolutionary theories and fine art respectively. The first part of the work discusses the lives and scientific insights of the eminent French naturalists Georges Cuvier (1769–1832) and Étienne Geoffroy Saint-Hilaire (1772–1844). Rejecting the explanations offered by natural theology, Knox maintains that descriptive anatomy can give answers to questions surrounding the origin and development of life in the natural world. The latter part of the book is concerned with the relation that anatomy bears to fine art, specifically the painting and sculpture of the Italian Renaissance. Entering the debate about the importance of anatomical knowledge in art, Knox focuses on 'the immortal trio' of Leonardo da Vinci, Michelangelo and Raphael. Henry Lonsdale's sympathetic biography of Knox has also been reissued in this series.

Great Artists and Great Anatomists

A Biographical and Philosophical Study

Robert Knox

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GREAT ARTISTS AND GREAT ANATOMISTS.

GREAT ARTISTS

AND GREAT ANATOMISTS;

A BIOGRAPHICAL AND PHILOSOPHICAL STUDY.

BY

R. KNOX, M.D., F.R.S.E.,

LECTURER ON ANATOMY, AND CORRESPONDING MEMBER OF THE "ACADÉMIE NATIONALE" OF FRANCE.

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THIS work is composed of two parallel Biographies. The first comprises the Life and Labours of George Cuvier and Geoffroy (St. Hilaire), the men who have most contributed to the development of the true relation of Anatomy to the Science of Living Beings. In the second part the reader will find a brief history of the relation of Anatomy to the Fine Arts. In the parallel biographies of Leonardo, Angelo, and Raphael, the Author is convinced that ample materials exist for the decision of the long-protracted controversy in respect of the relation of Anatomy to the Arts of Sculpture and Design. He is at the same time well aware that long prior to the great men whose lives he has here sketched, others existed with minds equal if not superior to them, but who, from pursuing other studies and other aims than the political game of life, constitute, notwithstanding, an epoch or era, less

brilliant, less fiery, perhaps more durable, than the epochs of Cæsar, of Alexander, and Napoleon. Such was Aristotle, and such the men who carved the Venus, the Laocoon, and the Apollo. But of the lives of these latter, little or nothing is known: they left no writings explanatory of the Canons of Art; the works of the great masters in painting have disappeared, whilst the matchless sculptures alone remain to attest a power of mind and a civilization which we scarcely yet comprehend. Although the Canons of Art must have been well understood by them as their discoverers, yet it is certain, that, however admirably they appreciated the relation of Anatomy to Art, they had never studied Anatomy. To some this will appear a paradox: but if those who think so will favour me with a perusal of this work, they will, I hope, find the paradox solved. The true relation of Anatomy to Science was perfectly understood by Aristotle. Such at least was the opinion of Cuvier himself, the greatest anatomist—*Descriptive Anatomist*—of any age. He preferred, as more exact, Aristotle's description of the anatomy of the elephant to that of Daubenton, his own immediate predecessor,

be it remarked; for Mertrud was nobody in science. Nevertheless, the author remains of the opinion, that prior to Bichat, exact Descriptive Anatomy, the greatest of all elements in the study of living beings, was unknown to Aristotle and to the world; whilst, in respect of philosophy, whatever the divine genius of the Greek may have grasped, a demonstration of his theory could not be given, so long as the anatomy of man and the human embryo was unknown to him. It remained then for Cuvier, Geoffroy, and Leonardo to test the true relation of Anatomy to Science, Philosophy and Art. The conjectures of the Ancients they converted into theories; they formed the era in which they lived. The object of this work then is threefold, 1st. To establish the exact relation of Descriptive Anatomy to the science of the animal organic world, as it now is and as it once existed. In the life and labours of George Cuvier, as he views them, the Author finds this relation fully made out. Before Cuvier appeared, geology was a farce, a subject of ridicule; cosmogony a myth; the history of creation a tissue of error and absurdities. 2nd. To trace Transcendental Anatomy to its essence, and to

show, in the life and labours of Geoffroy (St. Hilaire), that the philosophy of the creation of animals is explicable only by Descriptive Anatomy. 3rd. To discover, if possible, in the life and labours of the immortal artist who painted the "Cena," and of his great rivals, Angelo and Raphael, the true relation of Descriptive Anatomy to Art.

Other matters are no doubt discussed in these scientific Biographies, for of such this work really consists. It were impossible, for example, to overlook the fact, that there are men whose lives form an epoch in man's history; whose lives form, in fact, the history of the period in which they live. Such was Newton in respect of science; such was Aristotle; and, politically, such were Cæsar, Alexander, and Napoleon; what these men were in respect of the brute masses of men, those I now speak of were to the thinking world. Yet they wielded but one element of knowledge—Anatomy — Descriptive Anatomy — a science not yet fully understood in Britain.

Throughout this work, by the term Science is meant a knowledge of the living organic world, man of course included, in relation to the existing circumambient media; its relation

as it now appears to us, in time and in space, and the relation which each great natural section or grouping bears to all others. But in this definition the author ventures to include also the positive knowledge we have obtained through the discoveries of the immortal Cuvier, of the pre-existing organic forms, known by the name of Fossil Remains. The demonstrations of the relations of the groups of animals and plants comprising these organic worlds, apply equally, but less rigorously, than in the case of the now existing organic worlds, to these ante-historic organic configurations of life, owing to the destruction of nearly all the soft and perishable materials. The terms "former, or ancient world," "past creations," "successive organic worlds," are terms to which no definite meaning can be attached, there being in reality no such things. All these great results, as regards the progress of human knowledge, flow from the application of an element of thought, first discovered by Bichat, who applied it only to man; re-discovered by Cuvier, who applied it to the animal world in its *entirety*. It reacted on all other branches of human knowledge, by bestowing on the minds of men an illimitable

expansibility of thought, which is power, as proved by its immediately, and for ever, altering the character of human reason. Even in Cuvier's time its application, by Geoffroy, to the philosophy of organic beings, startled the scientific and thinking world.

By the term philosophy is meant, throughout this memoir, the result of the application of exact anatomy to the embryonic structures, and of the knowledge so acquired, to the theory of the origin of forms; from this, with the aid of the Cuvierian researches, resulted a *demonstration* of the unity of all organic beings from the beginning to the end—the past, present, and future—the discovery of the true relation of that which has been to that which is, and, without doubt, to that which is to be; a new cosmogony in fact, the direct result of that science, geology and paleontology, which the world owes to Cuvier; the restoration, in fact, of the history of creation to the subordination of those secondary laws which regulate all material things—a bringing, for the first time, within the pale of strict science a department of human knowledge which Aristotle and Lucretius, Leibnitz, Pascal, and Newton, had in vain endeavoured to effect.

Lastly, by Art is meant, the "Fine Arts," that is, Sculpture and Painting. Art, thus defined and circumscribed, the author places among the diviner arts, which eminently distinguish man from the mere animal. All men are not destined merely to wield a sabre and to feed a pig. The connexion of Art, with some knowledge on the part of the artist of the interior structure of man, has never been questioned; but the precise relation which Anatomy bears to Art, has not yet been, in the Author's opinion, determined. In the life and labours of Leonardo, Angelo, and Raphael, he offers a solution, or an attempt at a solution, of this difficult question. Fortuitous circumstances, highly favourable to the testing this great question, brought into contact the three great masters of modern times,—Leonardo, Angelo, Raphael. On all three, Nature had bestowed a divine genius, matchless hands, an intense longing for the perfect, a power to perceive and strongly to admire the truth. They re-discovered the beautiful and the perfect in Art; their minds were universal. But to each she had also given an individuality of character, which, by enabling them to look at the external world in

the bright mirror of their own reflection, furnishes to the historian the means of solving the important question I have already alluded to,—What is the relation of Science to Art? The discovery of this relation seems to have been reserved for Leonardo.