

circus, should have failed to advance the knowledge of comparative anatomy.\* I have already noticed the merit of Dioscorides in regard to the collection and study of plants, and it only remains, therefore, to observe that his works exercised the greatest influence on the botany and pharmaceutical chemistry of the Arabs. The botanical garden of the Roman physician Antonius Castor, who lived to be upward of a hundred years of age, was perhaps laid out in imitation of the botanical gardens of Theophrastes and Mithridates, but it did not, in all probability, lead to any further advancement in science than did the collection of fossil bones formed by the Emperor Augustus, or the museum of objects and products of nature which has been ascribed on very slight foundation to Apuleius of Madaura.†

The representation of the contributions made by the epoch of the Roman dominion to cosmical knowledge would be incomplete were I to omit mentioning the great attempt made by Caius Plinius Secundus to comprise a description of the universe in a work consisting of thirty-seven books. In the whole of antiquity, nothing similar had been attempted; and although the work grew, from the nature of the undertaking, into a species of encyclopædia of nature and art (the author himself, in his dedication to Titus, not scrupling to apply to his work the then more noble Greek expression *ἐγκυκλοπαιδεία*, or conception and popular sphere of universal knowledge), yet it must be admitted that, notwithstanding the deficiency of an internal connection among the different parts of which the whole is composed, it presents the plan of a physical description of the universe.

The *Historia Naturalis* of Pliny, entitled, in the tabular view which forms what is known as the first book, *Historia Mundi*, and in a letter of his nephew to his friend Macer still more aptly, *Naturæ Historia*, embraces both the heavens and the earth, the position and course of the heavenly bodies, the meteorological processes of the atmosphere, the form of the

\* The Numidian Metellus caused 142 elephants to be killed in the circus. In the games which Pompey gave, 600 lions and 406 panthers were assembled. Augustus sacrificed 3500 wild beasts in the national festivities, and a tender husband laments that he could not celebrate the day of his wife's death by a sanguinary gladiatorial fight at Verona, "because contrary winds had detained in port the panthers which had been bought in Africa!" (Plin., *Epist.*, vi., 34.)

† See *ante*, p. 190. Yet Apuleius, as Cuvier remarks (*Hist. des Sciences Naturelles*, t. i., p. 287), was the first to describe accurately the bony hook in the second and third stomach of the *Aplysiæ*.