If the development theory be true, "the early fossils ought to be very small in size," and "very low in organization." In the earliest strata we ought to find only "mere *embryos* and *fœtuses*; and if we find instead the *full-grown* and *mature*, then must we hold that the testimony of geology is not only *not in accordance* with the theory, but in positive opposition to it." Having laid this down as the *principle* by which the question is to be decided, our author proceeds to consider "what are the *facts*." The *Asterolepis* of Stromness *seems* to be the oldest organism yet discovered in the most ancient geological system of Scotland, in which vertebrate remains occur. It is probably the oldest Cœlacanth that the world has yet produced, for there is no certain trace of this family in the great Silurian system, which lies underneath, and on which, according to our existing knowledge, organic existence first began. "How, then," asks Mr. Miller, "on the two relevant points — bulk and organization — does it answer to the demands of the development hypothesis? Was it a mere fœtus of the finny tribe, of minute size and imperfect embryonic faculty? Or was it of, at least, the ordinary bulk, and, for its class, of the average organization?"

In order to answer these questions, Mr. Miller proceeds in his *third* chapter to give the recent history of the Asterolepis; in his *fourth*, to ascertain the cerebral development of the earlier vertebrata; and in his *fifth* chapter to describe the structure, bulk, and aspect of the Asterolepis. In the rocks of Russia certain fossil remains had been long ago discovered, of such a singular nature as to have perplexed Lamarck and other naturalists. Their true place among fishes was subsequently ascertained by M. Eichwald, a living naturalist; and Sir Roderick Murchison found that they were Ichthyolites of the Old Red Sandstone. Agassiz gave them the name of *Chelonichthys*; but in consequence of very fine specimens having been found in the Old Red Sandstone of Russia, which Professor Asmus of Dorpat sent to the British Museum, and which exhibited star-like markings, he abandoned his name of *Chelonichthys*, and adopted that of *Asterolepis*, or star-scale, which Eichwald had proposed. Many points, however, respecting this curious fossil remained to be determined, and it was fortunate for science that Mr. Miller was enabled to accomplish this object by means of a variety of excellent specimens which he received from Mr. Robert Dick, "an intelligent tradesman of Thurso, one of those working men of Scotland, of active curiosity and well developed intellect, that give character and standing to the est." Agassiz had inferred, from very imperfect fragments, that he *Asterolepis* was a strongly-helmed fish of the *Cœlacanths*, or hollow