

crust or shell, which alone survives; and to this peculiarity they owe their family name, Cœlacanth, or "hollow-spine." The internal hollow, *i. e.* cartilaginous centre, was, however, equally a characteristic of the spinous processes of the *Coccosteus*. In their general proportions, the Cœlacanths, if we perhaps except one species, — the *Glyptolepis microlepidotus*, — were all squat, robust, strongly-built fishes, of the Dirk Hatterick or Balfour-of-Burley type; and not only in the larger specimens gigantic in their proportions, but remarkable for the strength and weight of their armor, even when of but moderate stature. The specimen of *Holoptychius nobilissimus* in the British Museum could have measured little more than three feet from snout to tail when most entire; but it must have been nearly a foot in breadth, and a bullet would have rebounded flattened from its scales. And such was that ancient Cœlacanth family, of which the oldest of our Scotch Ganoids, — the *Asterolepis* of Stromness, — formed one of the members, and which for untold ages has had no living representative.

Let us now enter on our proposed inquiry regarding the cerebral development of the earlier vertebrata, and see whether we cannot ascertain after what manner the first true brains were lodged, and what those modifications were which their protecting box, the cranium, received in the subsequent periods. Independently of its own special interest, the inquiry will be found to have a direct bearing on our general subject.