

suite of fossils, which has now fully convinced our first comparative anatomists that there was an anomaly in the structure of the jaws of this ancient fish, unique among the vertebrata; and that, in calling to it the attention of the scientific world, I was in the right, not in the wrong. The under jaws contained two distinct sets of teeth; the one set or group in the line of the symphysis, the other set or group on the upper edge of the jaw, and placed on such different planes, that they could not possibly have been brought into action by the same movement of the condyles. And there are on the table specimens which show, that while the group in the customary place, the upper edge of the under jaw, were made to act against a group placed in the nether edge of the upper one by the usual vertical action, the groups so strangely placed in the symphysis, if brought into action at all, must have acted against each other through a lateral motion altogether unique. The jaws of the *Cocosteus* are interesting in another point of view, as being perhaps the oldest portions of any internal skeleton that have presented their structure to the microscope. And it is surely not uninteresting to see the osseous substance, destined to perform so important a part in the animal economy, presenting in so early an age its distinguishing characteristics; in especial, those arterial Haversian canals through which the ancient blood must have flowed for its nourishment, and those numerous corpuscles or life-points from which its organization began, and which continued to remain open as the sheltering cells in which its vitality resided. Was it impossible, in the nature of things, we ask, that life could be equally diffused over hard and rigid earth built up into this new animal substance, bone? and was it therefore merely sown over it in hollow microscopic points? Is bone rather a thing strongly garrisoned by vitality, than itself vital? Direct questions cannot always, in the present imperfect state of our knowledge, receive answers equally direct; and