

enacted, but not enforced, and so the breaches of it were scarce more exceptional than the observance,—that life, greatly more emphatically than now, was the least certain of all things,—and that both in sea and on the land the young and immature earth, like an inexperienced and careless nurse, was ever and anon overlaying and smothering its offspring.

Among the various ichthyic families and genera of the Lower and Middle Old Red Sandstone,—Acanths, Dip-terians, Cœlacanths, and Cephalaspian, —I shall refer to only two, and that in but a few brief words ; the one remarkable for its great size, the other for its extraordinary organization. The *Asterolepis* seems to have been one of at once the earliest and bulkiest of the ganoids. Cranial bucklers of this creature have been found in the flagstones of Caithness large enough to cover the front skull of an elephant, and strong enough to have sent back a musket-bullet, as if from a stone wall. The *Asterolepis* must have at least equalled in size the largest alligators ; and there were several points in which it must have resembled that genus of reptiles. Its head was covered with strong osseous plates, ornately fretted by star-like markings, and its body by closely imbricated and delicately-carved osseous scales. But it is chiefly in its jaws that we trace a reptilian relationship to the alligators. The alligators among existing reptiles, and the Lepidostei among existing reptile-fishes, are remarkable for a peculiar organization of tooth and maxillary, through which certain long teeth in the anterior part of the nether jaw are received into certain scabbard-like hollows in the anterior part of the upper jaw. The hollows receive the teeth when the mouth is shut, as the scabbard receives the sword. Now, in the *Asterolepis* this reptilian peculiarity was not restricted to a small group of the anterior teeth, but pervaded the entire jaw. Beside each of the creature's reptile teeth, in both jaws, there was a deep pit, which received the reptile tooth