

*onoids*, which have but eight tentacles, there exists a regular gradation of complication which in this place can only be announced. It is a fact of extreme interest, however, that the geological succession of coral animals, so far as we can judge, has been coincident with this structural gradation. Of fossil *Actiniæ* we can allege nothing, since, having soft bodies, no relics of them could have been preserved if they existed in the early ages of the world's history. But as to the other groups, we find the *Fungidæ* running through the Silurian, Devonian, and Carboniferous ages, while the *Porites* and *Astræans* bedecked the submarine parterres of Mesozoic Time, and the *Madrepores* united with them to adorn the Tertiary seas, and the *Halcyonoids* belong to the latest times.

A farther extraordinary coincidence is furnished by these coral animals. It has been shown by Agassiz, who examined the Florida Reef under the auspices of the United States Coast Survey, that the true reef-building polyps arrange themselves along the reef in the order of their rank and successive introduction upon the earth. The *Actiniæ* do not appear on the reef for the same reason that they do not figure in the records of geology. They are soft-bodied animals, and never secrete coral. The *Fungidæ*, furthermore, are not compound animals like the reef-builders, and are not confined to any particular depth in the sea. But when we come to the reef-making polyps, we find the true *Astræans* at the bottom, followed by the *Meandrines*, a higher section of the *Astræans*. Next, in ascending along the reef we encounter the architecture of the *Porites*, the *Madrepores*, and the *Halcyonoids* in due succession, and presenting a series of conceptions identical with that found in the structural gradation of polypi, and again in the order of their geological appearance.

What signify now these repetitions of identical succes-