

“It must not be supposed, however, that the difference in this respect between one bed and another is as sharply marked off as that between the chalk and the limestone. The characteristic fossils of one bed become less abundant in the bed above and disappear altogether in the others, or are gradually replaced by new fossils, which had not previously appeared.”<sup>1</sup>

The authors then proceed to enumerate the chief groups of strata composing the Calcaire Grossier, beginning at the bottom and tracing the succession upward. It is not necessary to follow them into these details. We may note that, even at that time, the prodigious richness of the lower parts of this formation in fossil shells had been shown by the labours of DeFrance, who had gathered from them no fewer than 600 species, which had been described by Lamarck. It was remarked by Cuvier and Brongniart that most of these shells are much more unlike living forms than those found in the higher strata. These observers also drew, from the unfossiliferous nature of the highest parts of the formation, the inference that during the time when the Calcaire Grossier was deposited slowly, layer after layer, the number of shells gradually diminished until they disappeared, the waters either no longer containing them or being unable to preserve them.

The gypseous series which succeeds offered to Cuvier and Brongniart an excellent example of what Werner termed a “formation,” inasmuch as it presents a succession of strata markedly different from each other, yet evidently deposited in one continuous

<sup>1</sup> *Journal des Mines*, xxiii. p. 436.