

abundant in the Anglo-Parisian basin and thence eastward, but are comparatively infrequent in the southern Cretaceous area. To the geologist, they have a value similar to those of the Jurassic system, as distinct species are believed to be restricted in their range to particular horizons, which have by their means been identified from district to district. To the student of the history of life, they have a special interest, as they include the last of the great Mesozoic tribes of the Ammonites and Belemnites. These organisms continue abundant up to the top of the Cretaceous system, and then disappear from the European geological record.¹¹⁰ Never was cephalopodous life so varied as in the Cretaceous period, just before its decline. It included some old Ammonite genera such as *Phylloceras*, *Lytoceras*, and *Haploceras*, some of which had continued even from Liassic time, together with new genera, some resembling old types (*Schloenbachia*), others which now appeared for the first time. Of these new forms *Crioceras* (Fig. 417) is an Ammonite with the coils of the shell not contiguous. *Scaphites* and *Ancyloceras* have the last coil straightened, and its end bent into a crozier-like shape (Fig. 418). *Toxoceras*, as its name implies, is merely bent into a bow-like form. *Hamites* is a long tapering shell, curved round hook-wise upon itself. In *Ptychoceras* the long tapering shell is bent once and the two parts are mutually adherent. *Turrilites* (Fig. 417) is a spirally coiled

¹¹⁰ No abrupt disappearance of a whole widely-diffused fauna probably ever took place. The cessation of Ammonites with the Cretaceous system in Europe can only mean that in this area there intervened between the deposition of the Cretaceous and Tertiary strata a long interval, marked by such physical revolutions as to extirpate Ammonites from that region. That the tribe continued elsewhere to live on into Tertiary time appears to be proved by the occurrence of some Ammonite remains in the oldest Tertiary beds of California. A. Heilprin, "Contributions to the Tertiary Geology and Palæontology of the United States," Philadelphia, 1884, p. 102.