

of phosphate are thus formed, especially in the interior of shells and foraminifera.<sup>387</sup>

Wherever terrestrial mammalia congregate, and especially where they die and leave their carcasses, phosphatic deposits may be formed if the conditions are favorable for the preservation of the remains. Caves haunted by hyenas serve as receptacles not only for the bones and excrement of these animals but also for bones of the various animals which they have dragged there as food. Hence in limestone countries "osseous breccias" are often found below the layer of stalagmite on the floor. Again, along the swampy margins of lakes and salt-marshes the bodies of wild animals are often mired in the boggy ground and perish there, and their bodies gradually sink below the surface. Hence phosphatic accumulations arise sometimes on an extensive scale, as has happened in different parts of the United States.<sup>388</sup>

In connection with the organic deposits of the sea-floor, further reference may be made here to the chemical processes in progress there, and to the probable part taken in these processes by living organisms and decaying animal matter. The transformation of sulphate of lime into carbonate, which may now be regarded as the chief source of the calcareous constituents of marine plants and animals, takes place on a gigantic scale in the ocean. The precipitation of manganic oxide and its segregation in concretions, often round organic centres (p. 769), presents a close analogy to the formation of concretionary bog iron-ore through the operation of the humus acids in stagnant water. The crys-

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<sup>387</sup> A. F. Renard and T. Cornet, Bull. Acad. Roy. Belg. xxi. 1891, p. 126.  
A. Strahan, Quart. Journ. Geol. Soc. xlvii. 1891, p. 356.

<sup>388</sup> Penrose, Bull. U. S. Geol. Surv. No. 46, 1888, p. 127.