

a lower bed in the cretaceous series in New Jersey, appears to rest on better evidence.\*

From New Jersey the cretaceous formation extends southwards to North Carolina and Georgia, cropping out at intervals from beneath the tertiary strata, between the Appalachian Mountains and the Atlantic. They then sweep round the southern extremity of that chain, in Alabama and Mississippi, and stretch northwards again to Tennessee and Kentucky. They have also been traced far up the valley of the Missouri, as far north as lat. 48°, or to Fort Mandan; so that already the area which they are ascertained to occupy in North America may perhaps equal their extent in Europe, and exceeds that of any other fossiliferous formation in the United States. So little do they resemble mineralogically the European white chalk, that in North America, limestone is upon the whole an exception to the rule; and even in Alabama, where I saw a calcareous member of this group, composed of marl-stone, it was more like the English and French Lias than any other European secondary deposit.

At the base of the system in Alabama, I found dense masses of shingle, perfectly loose and unconsolidated, derived from the waste of paleozoic (or carboniferous) rocks, a mass in no way distinguishable, except by its position, from ordinary alluvium, but covered with marls abounding in Inocerami.

In Texas, according to F. Römer, the chalk assumes a new lithological type, a large portion of it consisting of hard siliceous limestone, but the organic remains leave no doubt in regard to its age, the *Baculites anceps* and ten other European species occurring there.

In South America the cretaceous strata have been discovered in Columbia, as at Bogota, and elsewhere, containing Ammonites, Hamites, Inocerami, and other characteristic shells.†

In the south of India, also, at Pondicherry, Verdachellum, and Trinconopoly, Messrs. Kaye and Egerton have collected fossils belonging to the cretaceous system. Taken in connection with those from the United States, they prove, says Professor E. Forbes, that those powerful causes which stamped a peculiar character on the forms of marine animal

\* In the Principles of Geology, ninth ed. p. 145, I cited Dr. Leidy, of Philadelphia, as having described (Proceedings of Acad. Nat. Sci. Philad. 1851) two species of cetacea of a new genus which he called *Priscodelphinus*, from the greensand of New Jersey. In 1853, I saw the two vertebræ at Philadelphia, on which this new genus was founded, and afterwards, with the aid of Mr. Conrad, traced one of them to a *Miocene* marl pit in Cumberland county, New Jersey. The other (the *Plesiosaurus* of Harlan), labelled "Mullica Hill" in the Museum, would no doubt be an upper cretaceous fossil, if really derived from that locality, but its mineral condition makes the point rather doubtful. The tooth of *Stenorhynchus vetus*, figured by Leidy from a drawing of Conrad's (Proceed. of Acad. Nat. Sci. Philad. 1853, p. 377), was found by Samuel R. Wetherhill, Esq., in the greensand 1½ miles southeast of Burlington. This gentleman related to me and Mr. Conrad, in 1853, the circumstances under which he met with it, associated with *Ammonites placenta*, *Ammonites Delawareensis*, *Trigonia thoracica*, &c. The tooth has been mislaid, but not until it had excited much interest and had been carefully examined by good zoologists.

† Proceedings of the Geol. Soc. vol. iv. p. 391.