

already known is about 100 feet. Its geographical range, according to M. Hébert, is not less than 45 leagues from east to west, and 35 from north to south. Within these limits it occurs in small patches only, resting unconformably on the white chalk. It was originally regarded as cretaceous by M. E. de Beaumont, on the ground of its having undergone, like the white chalk, extensive denudation previous to the Eocene period; but many able paleontologists, and among others MM. C. D'Orbigny, Deshayes, and D'Archiac, disputed this conclusion, and, after enumerating 54 species of fossils, declared that their appearance was more tertiary than cretaceous. More recently, M. Hébert having found the *Pecten quadricostatus*, a cretaceous species, in this same pisolitic rock, at Montereau near Paris, and some few other fossils common to the Maestricht chalk, and to the Baculite limestone of the Cotentin, in Normandy, classed it as an upper member of the cretaceous group, an opinion since adopted by M. Alcide D'Orbigny, who has carefully examined the fossils. The *Nautilus Danicus* (fig. 249), and two or three other species found in this rock, are frequent in that of Faxoe in Denmark, but as yet no Ammonites, Hamites, Scaphites, Turrilites, Baculites, or Hippurites have been met with. The proportion of peculiar species, many of them of tertiary aspect, is confessedly large; and great aqueous erosion suffered by the white chalk, before the pisolitic limestone was found, affords an additional indication of the two deposits being widely separated in time. The pisolitic formation, therefore, may eventually prove to be somewhat more intermediate in date between the secondary and tertiary epochs than the Maestricht rock.

It should however be observed, that all the above-mentioned strata, from the Thanet sands to the Pisolitic limestone inclusive, and even the Maestricht rock, next to be described, exhibit marks of denudation experienced at various dates, subsequently to the consolidation of the white chalk. This fact helps us in some degree to explain the remarkable break in the sequence of European rocks, between the secondary and tertiary eras, for many strata which once existed have doubtless been swept away.

#### CLASSIFICATION OF THE CRETACEOUS ROCKS.

The cretaceous group has generally been divided into an Upper and a Lower series, each of them comprising several subdivisions, distinguished by peculiar fossils, and sometimes retaining a uniform mineral character throughout wide areas. The Upper series is often called familiarly *the chalk*, and the Lower *the greensand*, the last-mentioned name being derived from the green color imparted to certain strata by grains of chloritic matter. The following table comprises the names of the subdivisions most commonly adopted:

##### UPPER CRETACEOUS.

- A. 1. Maestricht beds and Faxoe limestones.
2. White chalk with flints.
3. Chalk marl, or gray chalk slightly argillaceous.