

Cheltenham, attains a maximum depth of nearly 150 feet, but dies out in Oxfordshire, and is absent in the eastern and northeastern counties. Among its more abundant fossils are *Ammonites subcontractus*, *Goniomya literata*, *Ostrea acuminata*, *Rhynchonella varians*, and *Waldheimia ornithocephala*; but most of its fossils occur also in the Great and Inferior Oolite. The conditions for marine life over the muddy bottom on which this deposit was laid down would appear to have been unfavorable. Thus few gasteropods are known from the Fuller's Earth. The beds of economic fuller's earth are worked at Midford and Wellow near Bath; their detergent properties are due to physical characters rather than chemical composition.

The Great Oolite (Bathonian) consists, in Gloucestershire and Oxfordshire, of three sub-groups of strata; (a) lower sub-group of thin-bedded limestones with sands, known as the Stonesfield Slate; (b) middle sub-group of shelly and yellow or cream-colored, often oolitic limestones, with partings of marl or clay—the Great Oolitic proper; (c) upper sub-group of clays and shelly limestones, including the Bradford Clay, Forest Marble, and Cornbrash. These subdivisions, however, cease to be recognizable as the beds are traced eastward. The Bradford Clay of the upper sub-group soon disappears, and the Forest Marble, so thick in Dorsetshire, thins away in the north and east of Oxfordshire, the horizon of the group being represented in Bedfordshire, Northamptonshire, and Lincolnshire, by the "Great Oolite Clays" of that district. The Cornbrash, however, is remarkably persistent, retaining on the whole its lithological and palæontological characters from the southwest of England to the borders of the Humber. The limestones of the middle sub-group can be traced from Bradford-on-Avon to Lincolnshire. The lower sub-group, including the Stonesfield Slate, is locally developed in parts of Gloucestershire and Oxfordshire, and passes into the "Upper Estuarine series" of the Midland counties.⁶⁸

The fossils of the Stonesfield Slate are varied and of high geological interest. Among them are about a dozen species of ferns, the genera *Pecopteris*, *Sphenopteris*, and *Tæniopteris* being still the prevalent forms. The cycads are chiefly species of *Palæozamia*, and the conifers of *Thuyites*. With these drifted fragments of a terrestrial vegetation there occur

⁶⁸ Judd's "Geology of Rutland," Mem. Geol. Surv.