

some points the beds are carbonaceous, as at the mouth of the Patuxent river, where a bed of lignite several feet in thickness is exposed at water level.

The fossils are very numerous, consisting mainly of diatoms, corals, mollusks, brachiopods and cetaceans, which admit of a division of the strata into faunal zones, as in the case of the Eocene. Three such faunal zones have been described in the Miocene of Maryland, viz.: 1. *The Plum Point fauna*, 2. *The Jones' Wharf fauna*, 3. *The St. Mary's fauna*, the determination in each case being based entirely upon the molluscan types.

THE LAFAYETTE FORMATION.—The Lafayette formation, so called on account of the similarity of the strata in Maryland to those described by Hilgard in Mississippi under that name, widely covers the deposits of the Coastal Plain, hitherto described, and occupies a broad area throughout the southern and eastern portions of the state. In southern Maryland the Lafayette formation covers the higher levels, but is found at a much less elevation in the eastern counties, where it passes eastward beneath the covering of Pleistocene deposits.

The deposits of the Lafayette formation consist of gravels, sands and clays, which are very irregularly stratified and often change rapidly within narrow limits. Toward the ancient shore line the formation is a coarse gravel, through which is scattered a yellowish sandy loam, the whole cemented at times by hydrous iron oxide into a more or less compact conglomerate. The eastward extension of the formation shows a gradual lessening of the coarser elements and a larger admixture of loam. The constituent materials out of which the deposits are formed are frequently much weathered and become a pronounced arkose. The deep orange color of the strata is highly characteristic of the formation. The deposits seldom exceed 25 feet in thickness, although at some points a thickness considerably greater has been observed.

The Lafayette formation has afforded no fossils in the state of Maryland to indicate its geological age. From the fact, however, that the strata rest unconformably upon the underlying Chesapeake deposits of Miocene age and are in turn unconformably overlain by