

diversified topography. Along the eastern margin the land attains at several points heights exceeding 400 feet; while at Catonsville it reaches 525 feet above sea-level. Toward the west and northwest the land gradually increases until it culminates in Parr's Ridge, which exceeds 850 feet in Carroll county. The drainage of the eastern division is mainly to the east and southeast. On its northern and southern borders it is traversed by the Susquehanna and Potomac rivers, which have their sources without the area, while the smaller streams which lie between them drain directly to the Chesapeake Bay or into the main rivers. Among the most important of these intermediate streams are the Gunpowder, Patapsco and Patuxent rivers, whose headwaters are situated upon Parr's Ridge. The Patapsco flows in a deep rocky gorge until it reaches the Relay, where it debouches into the Coastal Plain. All of these streams have rapid currents as far as the eastern border of the Piedmont Plateau, and even in the case of the largest are not navigable. The broad, fertile limestone valleys to which the present drainage has become partially adjusted are a striking feature of this area and are well represented to the north of Baltimore in the Green Spring and Dulaney's valleys. On account of the complicated character of the stratigraphy, which will be later discussed, the valleys take different directions and are of very variable form and extent.

The *western division* extends from Parr's Ridge to the Catoctin Mountain. Along its western side is the broad limestone valley in which Frederick is situated and through which flows the Monocacy river from north to south, entering the Potomac river at the border line between Montgomery and Frederick counties. The valley near Frederick has an elevation of 250 feet above tide, which increases slowly to the eastward toward Parr's Ridge and very rapidly to the westward toward the Catoctin Mountain. Situated on the eastern side of the valley, just at the mouth of the Monocacy river and breaking the regularity of the surface outline, is Sugar Loaf Mountain, which rises rapidly from the surrounding plain to a height of 1250 feet. With the exception of a few streams which flow into the Potomac directly, the entire drainage of the western district is accom-