

and Ireland. The fresh-water limestones and clays of some old lake-basins (those of Miocene time in Auvergne and Switzerland, and of Eocene age in Wyoming, for example) cover areas occasionally hundreds of square miles in extent, and attain a thickness of hundreds, sometimes even thousands of feet.

Existing lakes are of geologically recent origin. Their disappearance is continually in progress by infilling and erosion. Besides the displacement of their water by alluvial accumulations, they are lowered and eventually drained by the cutting down of the barrier at their outlets. Where they are effaced merely by erosion, it must be an excessively slow process, owing to the filtered character of the water (p. 684); but where it is performed by the retrocession of a waterfall at the head of an advancing gorge, it may be relatively rapid after it has once begun.<sup>199</sup> In a river-course it is usual to find a lake-like expansion of alluvial land above each gorge. These plains may be regarded as old lake-bottoms, which have been drained by the cutting out of the ravines (p. 662). Successive terraces often fringe a lake and mark former levels of its waters. It is when we reflect upon the continued operation of the agencies which tend to efface them, that we can best realize why the lakes now extant must necessarily be of comparatively modern date. Their modes of origin are discussed in Book VII.

2. **Saline Lakes**, considered chemically, may be grouped as *salt lakes*, where the chief constituents are sodium and magnesium chlorides with magnesium and calcium sul-

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<sup>199</sup> The level of the Lake of Geneva is said to have been lowered about six and a half feet since Roman times (Dausse, Bull. Soc. Geol. France (3), iii. p. 140); but this may be explicable by diminution in the water-supply.