

CHAPTER III.

RIVERS AND STREAMS :—UPPER COURSE OF RIVERS AND STREAMS—TORRENTS,
WATERFALLS, CATARACTS, AND RAPIDS.



THE rivers and the mountains form the most natural divisions of the earth's surface ; they are the boundary-lines which frequently mark the frontiers of empires or countries, and limit nationalities. The basins of rivers belong more particularly to the inclined strata which, rising with a gradual ascent, form a kind of intermediary between the table-lands and the low plains (the *Stufenlaender* of Carl Ritter). Their more or less rapid incline, their relative situation in connection with the great plains and the ocean, and, finally, the direction of their course, are so many distinct features which invest with an individuality of its own each of those great stages or terraces of the globe technically known as *geographical* or *orographical basins*. Their importance depends on the number of rivers and streams which they produce ; while, as for the rivers, *their* importance is estimated by the volume of their waters and the length of their course.

The volume of a river is computed by the depth and width of its channel, as well as by its slope, which is in correlation with the rapidity of its current. Its *development* results from the distance between its source and its mouth on the one hand, and from the number of its ramifications and tributaries on the other. A river insignificant in appearance, may be raised into importance by the circumstances of the soil. To cite but one example, the Iser, a small Bavarian stream, receives in its course 860 affluents on the left bank, and 433 on the right ; it is therefore fed by 1294 springs, to which 136 lakes are added : all these waters are poured into the Iser through 103 tributaries. It is easy to understand the usefulness