

## CHAPTER IV.

### THE MID-COURSE OF THE RIVERS :—FLOODS AND INUNDATIONS.

**A**CCORDING to Ritter,—than whom there is no more eminent authority in geographical science,—cataracts and rapids are most numerous in the upper and mid-course of rivers. In the mid-course, however, the channel conspicuously assumes a more gradual development. The Volga, throughout the lower part of its flow, does not offer a bolder gradient than 1 in 2500 ; in other rivers the incline is even gentler. Accordingly the waters glide along, yielding to their own pressure. They corrode their banks in the direction where their waters meet with the least resistance ; and change their course according to the nature of the opposed shores, executing the most capricious meanders. As a general rule, the windings of the mid-course of rivers follow the direction of the hydrographical *massifs*. It is then that they love to stud their surface with islands, of which so many begem the broad bosom of the Rhine. In the St. Lawrence (Canada), at the entrance of Lake Ontario, the islands form a veritable archipelago : they are called the *Thousand Isles*, but in reality they number one thousand six hundred and ninety-two.

The bed of a river sometimes cuts transversely a chain of mountains, which opens before it as if by enchantment, astonishing the voyager with the most agreeable surprises, and suddenly unfolding before him the most beautiful panoramas. These gaps or passes, which originate such picturesque effects, are very numerous on the noble Hudson river of North America.

Another cause of the retardation of the current is the ocean-tide, whose waves press back the stream towards its source, or, at least, arrest for awhile their onward flow. This stagnation increases the