

a cutting back of the western rivers has resulted in their capture, with the result that the eastern rivers with which they were formerly connected have diminished in size and fail to reach the main stream.

The Rio Grande Province differs from the Mississippi Province principally in the paucity of types. Not one of the endemic nearctic families is present; the Esocidæ are absent, and the Percidæ and Centrarchidæ are represented by a few species only. A considerable proportion of the true fresh-water fishes belong to the Cyprinidæ, whilst the presence of Cichlidæ and Characinidæ is a positive feature which distinguishes this area from other parts of the Nearctic Region.

The Rio Lerma System (excluding the Rio Grande de Santiago below the falls, and properly including, as Dr. Meek has shown, the Rio San Juan, a tributary of the Panuco, as well as the isolated lakes in the States of Michoacan and Mexico) has so peculiar a fish-fauna that it may be regarded as a separate sub-region of the Nearctic Region.

The viviparous Cyprinodontidæ of the sub-family Characondontinæ are characteristic of and nearly peculiar to this, the Lerma, Sub-region, in which the Atherinid genus *Chirostoma* is represented by a number of species which show a remarkable diversity. Both these groups are probably derived from marine ancestors which entered the river at a remote epoch; none of the marine types (Gobiidæ, Mugilidæ, &c.) which are found at the present day in neighbouring rivers, such as the Balsas and Panuco, have been able to make their way into the Lerma System, from which neotropical fishes are also absent.

The Cyprinidæ of this sub-region differ considerably from those of the Rio Grande, as five of the seven genera are endemic. With the exception of a Cat-fish (*Amiurus*) and a Lamprey (*Lampetra*), all the fishes of the Lerma Sub-region belong to the three groups already mentioned.

Below, in comparing some of the shore-fishes of the Pacific and Atlantic coasts of Central America, it is shown that in many cases D. S. Jordan's generalization—to the effect that a form occurring in a certain area has as its nearest relative a form inhabiting a neighbouring area separated by some sort of barrier from the first—holds good. In such cases isolation appears to have been a factor in determining specific differentiation.

Jordan's generalization also holds good for many groups of fresh-water fishes, but for many others it does not. As examples of the latter we may instance the Cichlid fauna of Lakes Managua and Nicaragua and the greater part of the fish-fauna of the Lerma System.