

in their whole length, a continued chain near the shore (the Andes and the Cordillera of Venezuela), while the eastern coast presents masses of more or less lofty mountains only between the 12° and 30° south lat. In this space, 360 leagues in length, the system of the Brazil mountains corresponds geologically in form and position with the Andes of Chile and Peru. Its most considerable portion lies between the parallels 15° and 22° , opposite the Andes of Potosi and La Paz, but its mean height is five toises less, and cannot even be compared with that of the mountains of Parime, Jura, and Auvergne. The principal direction of the Brazilian chains, where they attain the height of from four to five hundred toises, is from south to north, and from south-south-west to north-north-east; but, between 13° and 19° the chains are considerably enlarged, and at the same time lowered towards the west. Ridges and ranges of hills seem to advance beyond the land-straits which separate the sources of the Rio Araguay, Parana, Topayos, Paraguay, Guapore, and Aguapehy, in 63° long. As the western widening of the Brazilian group, or rather the undulations of the soil in the Campos Parecis, correspond with the spurs of Santa Cruz de la Sierra, and Beni, which the Andes send out eastward, it was formerly concluded that the system of the mountains of Brazil was linked with that of the Andes of Upper Peru. I myself laboured under this error in my first geologic studies.

A coast chain (Serra do Mar) runs nearly parallel with the coast, north-east of Rio Janeiro, lowering considerably towards Rio Doce, and losing itself almost entirely near Bahia (lat. $12^{\circ} 58'$). According to M. Eschwege,* some small ridges reach Cape Saint Roque (lat. $5^{\circ} 12'$). South-east of Rio Janeiro, the Serra do Mar follows the coast behind the island of Saint Catherine as far as Torres (lat. $29^{\circ} 20'$); it there turns westward, and forms an elbow stretching by the Campos of Vacaria, towards the banks of the Jacuy.

Another chain is situated westward of the shore-chain of Brazil. This is the most lofty and considerable of all, and is called the chain of Villarica. Mr. Eschwege distinguishes

* *Geognostisches Gemälde von Brasilien*, 1822. The limestone of Bahia abounds in fossil wood.