bordered by a wall of brightly coloured bluffs from 50 to 250 ft. high which continue with occasional interruptions to the mouth of the Amazon. About Cape St Roque the coast is covered with sand dunes. From the Abrolhos Islands northward to longitude 37° west of Cape St Roque, there are many coral reefs, some of them several miles off shore and many miles in length and breadth, while in other places they follow the coast-line for a hundred miles or more with a few interruptions, now touching the shore, and now standing out two or three miles from the land. Along the parts of the coast where the coral reefs occur are also reefs of hard sandstone that 'are often mistaken for coral reefs. These stone reefs stand like artificial walls or breakwaters across the mouths of the smaller rivers and the choked up valleys, and thus form several important ports on the north-east coast: such are the ports of Pernambuco, Natal, Porto Seguro, and others of minor importance. North of the mouth of the Amazon the coast is low, much of it is swampy, and all of it is forest-covered as seen from the ocean. This low coast extends as far north and west as the headland north of the Gulf of Paria where the Merida or Venezuelan branch of the Andes reaches the sea.

In southern Venezuela and Guiana and northern Brazil is a plateau commonly known as the Guiana highlands, above which rise several peaks.

Peaks. Elevation.

ft.

Roraima 8740

Ouida 8500

Maraguaca 8230

Turagua 6000

This highland region is mostly forest-covered, but it contains also large areas of open grass-covered plains.

Earthquakes occur throughout the entire length of the Andes; the shocks are sometimes of sufficient violence to do serious damage to cities and towns and to destroy many lives. Such disturbances are almost unknown along the Brazilian side of the continent.

The eastern coast of South America has remarkably few islands, and these are mostly small, except Trinidad off the coast of Venezuela and the islands of the Marajó group in the mouth of the Amazon. Trinidad (area 1755 sq. m.) is separated from the continent by the Gulf of Paria. Along the northern edge of the island is a range of mountains about 3000 ft. high, which are geologically the eastern end of the Cumana range of the Venezuelan mainland. On the south side of this island is the famous pitch lake —the most extensive deposit of asphalt known. West and north of Trinidad, and lying farther off the coast, are several small islands of historical interest and commercial importance: Tobago, Margarita, Blanquilla and the Curaçao group. Off Cape St Roque (230 m.) is the small Fernando de Noronha group of volcanic islands. The main island has an area of only 12 sq. m. Though this island is separated from the mainland by a channel 13,000 ft. deep, it really stands upon the submerged corner of the South American continent. The Rocas is a small island 80 m. west of Fernando de Noronha. The Falkland Islands in lat. 51° cover an area of 6500 sq. m.; their shores are indented by long tortuous channels that have the appear- anee of having been made by the depression of a hilly land surface. One of these channels separates the two main islands. Mt Adams, the highest peak on the group, has an elevation of 2300 ft. The group stands upon the submerged edge of the continent, from which it is separated by a shallow sea. Its flora and fauna show that it was formerly a part of the mainland. The Tierra del Fuego group of islands, as well as the many islands both large and small that border the west coast as far north as latitude 42°, are all the higher portions of the continental margin left above water when this part of the continent was depressed. The islands of Juan Fernandez in the same latitude as Valparaiso, and the Galapagos group immediately under the equator are the only others on the west coast worthy of mention.

The Amazon, the Orinoco and the Paraguay or La Plata river systems jointly drain an area of 3,686,400 sq. m. Less imposing but yet large and important streams are the Magdalena in Colombia, the Essequibo in British Guiana and the São Francisco in Brazil. The Amazon (properly the Rio das Amazonas or river of the Amazons) and its tributaries is not only the largest of the South American rivers, but it is the largest in the world. The total navigable length of the main stream from Pará to the head of navigation on the Huallaga in Peru is 3000 m. ; and this does not include the hundreds of navigable parallel side channels that aeeom- pany the main stream from its mouth almost to the mouth of the Javary. Above the falls again these streams *are* all navigable for long distances. Except at Obidos the Amazon is nowhere confined to a single channel, but it spreads over a vast flood-plain and flows with a sluggish current through thousands of side channels that anastomose with each other, so that one unfamiliar with the stream cannot distinguish the main channel. At several places the river is so wide that one looking across it sees a water horizon as if at sea. Much of the region is more like a great fresh-water sea filled with islands than an ordinary valley with a river running through it. For the most part the land along the stream is low, flat, marshy and at times under water. At a few places, however, notably at Éreré, Obidos, Velha Pobre, Parú, Paraua-quára and Almeirim table- topped hills are visible from the river. The banks of the stream and of its side channels are everywhere covered with a dense forest. The valley, however, is not all forest-covered. From near the Oyapok on the Guyana frontier a series of open grassy campos, interrupted only by the wooded banks of streams, follow along the north side of the Amazon for about 500 m. and extend into British Guiana and the region of the headwaters of Rio Branco. The upper Amazon basin opens broadly northward connecting with the Orinoco drainage across a low watershed, while on the south it is separated by a low divide from the Paraguay basin. The Orinoco rises in the highlands between Venezuela and Brazil, flows westward and north- ward around this elevated region and then flows eastward into the Atlantic. Along its lower course the banks of the stream are covered with dense forests; in its upper course the mountainous highlands are visible along its right bank, while on its left are vast stretches of flat, treeless, grass-covered plains that extend to the foot-hills of the Cordillera de Merida. The main stream is navigable during a part of the year for a distance of 1000 m. or more.

Under the name of Rio de la Plata may be included the Uruguay and the Paraguay, which enter the ocean through the La Plata estuary, and the Parana which is the most important branch of the Paraguay. It is a noteworthy feature of the streams entering the Paraguay or La Plata basin that many of those flowing from the arid regions on the west are more or less brackish, while those from the rainy forest-covered regions of Brazil are all fresh-water streams. The upper Paraguay is a sluggish stream winding through grass- covered plains dotted over with palm trees. Above rise a few isolated peaks like so many islands in a great lake. The Gran Chaco is a vast plain, almost perfectly flat, covered with rank vegetation and much of it with water, lying along the west side of the Rio Paraguay in northern Argentina and in Paraguay.

The São Francisco, the largest river that lies wholly in Brazil, rises in the highlands of Minas Geraes in latitude 21° and flows north-eastward parallel with the coast until it reaches latitude 9° 30' where it bends sharply to the right and enters the Atlantic. It flows entirely through a hilly or mountainous country. It is navigable along its lower course nearly to the falls of Paulo Affonso, 140 m. from its mouth, and also above the falls. In Colombia the Magda­lena is a crooked muddy stream about 2000 m. long and navigable as far as Honda.

Most of the lakes of South America are mountain lakes in the Andes or along its base. Lake Titicaca in Bolivia is, in respect of elevation and position, the most remarkable of its size in the world. Its surface is 12,545 ft. above sea-level, it has an area of nearly 5000 sq. m. and a maximum depth of 700 ft., and never freezes over. This lake discharges into a marsh that is supposed to have no outlet. Lake Junin or Chinchaicocha on the plateau east of Lima has an altitude of 13,380 ft., and covers an area of 200 sq. m. Along the eastern base of the Andes in southern Argentina is a series of lakes whose basins were probably made by the glaciers that formerly flowed down from the mountains on the west. There are many lakes, both large and small, scattered over the flood-plains of the great rivers of South America, but these are mostly phases of river development. Along the coast-lines there are also occasional lakes of brackish water produced by the depression of the coast and the closing of the open mouths of estuaries thus formed, or by sand barrier beaches thrown up by the sea. Such is Lagoa dos Patos in southern Brazil and many smaller ones on the Brazilian coast. Lake Maracaibo on the coast of Venezuela is a large narrow-necked bay like those of Rio de Janeiro and Bahia, rather than a true lake.

*Flora.—*The warm, wet, tropical portions of South America are especially favourable to the development of plant life. This conti- nent has therefore furnished an unusually large number of the world’s useful plants. Among these are several valuable woods, rubber- producing plants, cotton, potato, tomato, mandioca, pineapple, maize, cinchona, ipecac, vegetable ivory, coca, the chocolate plant and Paraguayan tea. Other tropical and sub-tropical plants such as coffee, sugar-cane, oranges and bananas have been introduced and are extensively cultivated. The flora of the continent embraces a large number of peculiar types that originated either in the highlands of Brazil or in the Andes.

The flora of the Amazon valley may be taken as the type of that of the moist tropical valleys. The forests are so dense, rank and matted with undergrowth as to be almost impenetrable. Palms are the most characteristic and beautiful trees, and reach their greatest development in the Amazon region. They take on a great variety of forms: some have trunks 100 ft. and more in height while others have no trunks at all, but spring like tufts from the ground; some are two feet or more in diameter, while others are as slender as a lead pencil. Bamboos grow to an enormous size and form dense thickets along certain streams. The shaded portions of the forests frequently abound in beautiful ferns, some of which are so small as to be almost microscopic, while others reach the dimensions of trees. For the most part the plants of the open campos have a stunted appearance and the grasses are wiry and tough.

A noteworthy feature of these tropical forests is that they are seldom made up of trees of a single species or of but few species. In