

foundation to build upon. (3) The presence of volcanic action, which, through occasional submarine action, destroys the life of a coast. (4) The depth of water on precipitous shores; for the reef-making corals do not grow where the depth exceeds 150 feet.

For the last-mentioned reason, reefs are prevented from commencing to form in the deep ocean. But if by other accumulations, or in any other way, the bottom is brought up to the limiting distance from the surface, Corals may commence the making of reefs.

Coral formations are most abundant in the tropical Pacific, where there are 290 coral islands, besides extensive reefs around other islands. The Paumotu Archipelago, east of Tahiti, contains between 70 and 80 coral islands; the Carolines, including the Radack, Ralick, and Gilbert groups, as many more; and others are distributed over the intermediate region. The Tahitian, Samoan, and Fiji Islands are famous for their reefs; also New Caledonia and the islands to the northwest. There are reefs also about some of the Hawaiian Islands. The Laccadives and Maldives, in the Indian Ocean, are among the largest coral islands in the world. The East Indies, the eastern coast of Africa, the West Indies, and southern Florida abound in reefs; and Bermuda, in latitude  $32^{\circ}$  N., is a coral group. Reef-forming Corals are absent from western America, except along the coast of Central America as far north as the Gulf of California, and they are mostly absent from western Africa, on account of the cold extratropical currents that flow toward the equator: for the same reason, there are no reefs on the coast of China. (See the Physiographic Chart.)

### 1. Coral Islands.

1. *Forms.* — *Atolls.* — A coral island commonly consists of a narrow rim of reef, surrounding a lagoon, as illustrated in the annexed sketch (Fig. 143).

143.



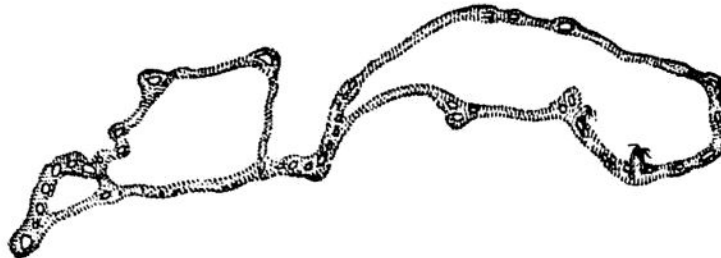
Coral island, or atoll.

Such islands are called *atolls*, — a name of Maldivian origin. Maps of two atolls are given in Figs. 144, 145, showing the rim of coral reef, the salt-water lake or lagoon, and the variations of form. They are never circular.

144.



145.



ATOLLS. — Fig. 144, Apia, one of the Gilbert Islands; 145, Menchikoff, one of the Carolines.

The size varies from a length of fifty miles to two or three; and, when quite small, the lagoon is wanting, or is represented only by a dry depression.