

Professor Semper of Wurzburg has examined the breathing apparatus of the Coconut Crab (*Birgus latro*), and finds * that a large cavity on the back, commonly called the gill cavity, has the function of a true lung. By means of blood-vessels in its walls the animal breathes air directly. This cavity has been commonly said to contain water, by which the animal was supposed to moisten its gills, in order that it might breathe through them alone. The breathing by the gills when on land is considered by Semper as secondary. Similarly, the gill cavity acts as a true lung in other Land Crabs.

At Kandavu I had an opportunity of visiting the outer margin of a barrier reef. It was one of the reefs stretching across the mouth of Ngaloa Bay. As it is approached from behind in a boat, and viewed from sea level, nothing is visible of the reef itself at a distance but a line of small detached masses of rock which appear here and there, standing out dark against the horizon. As the waves approach successively the different portions of the reef, their crests are seen rising dark above the reef-line. Then as they break against the margin the isolated rock-masses show out in relief against the white background of foam.

As the reef is approached more closely, the water becomes shallower, and assumes a yellow tinge, caused by the light reflected from the growing corals. The boat now requires to be steered with care along a zigzag path between coral patches, and at last grates on the growing coral as the water shallows rapidly towards the margin of the reef, and it becomes necessary to wade in order to proceed further.

It is in the shallow sheltered water, inside the actual edge of the barrier, that the finest and best grown specimens of the corals are to be found. The tufts, bushes, and rounded masses of the various corals are to be seen growing here in abundance, but scattered over the area, with plenty of more or less barren interspaces in the "coral plantation," as Dana terms it. The various forms of the spongy tissueed Madreporas are the characteristic feature in these Fijian reefs, there being no less than 26 species of Madrepora known from Fiji.

The outer margin of the reef is raised above the level of the coral plantation in the still waters within; thus the water on it is very shallow at low tide, and it is often laid dry. At Ngaloa Bay the barrier reef springs from the fringing reef, running out from the coast across the mouth of the bay. Its elevated margin was not more than 20 to 30 yards wide. There is an elevated strip of about this width stretching all along the reef;

* "Ueber die Lunge von *Birgus latro*." Zeitschrift für Wiss. Zoologie, 1878, s. 282.