III. Local Causes influencing Distribution.

Coral-making species generally require pure ocean water, and they especially abound in the broad inner channels among the reefs, within the large lagoons, and in the shallow waters outside of the breakers. It is therefore an assertion wide from the fact that only small corals grow in the lagoons and channels, though true of lagoons and channels of small size, or of such parts of the larger channels as immediately adjoin the mouths of fresh-water streams.

There are undoubtedly species especially fitted for the open ocean; but as peculiar conveniences are required for the collection of zoöphytes outside of the line of breakers, we have not the facts necessary for an exact list of such species. From the very abundant masses of Astræas, Mæandrinas, Porites, and Madrepores thrown up by the waves on the exposed reefs, it was evident that these genera were well represented in the outer seas. In the Paumotus, the single individuals of Porites lying upon the shores were at times six or eight feet in diameter. Around the Duke of York's Island, the bottom was observed to be covered with small branching and foliaceous Montipores, as delicate as any of the species in more protected waters.

Species of the same genera grow in the face of the breakers, and some are identical with those that occur also in deeper waters. Numerous Astræas, Mæandrinas, and Madrepores grow at the outer edge of the reefs where the waves come tumbling in with their full force. There are also many Millepores and some Porites and Pocillipores in the same places. But the weaker Montipores, excepting incrusting species, are found in stiller waters either deep or shallow.

Again, the same genera occur in the shallow waters of the reef inside of the breakers. Astræas, Mæandrinas and Pocillipores are not uncommon, though requiring pure waters. There are also Madrepores, some growing even in impure waters. One species was the only coral observed in the lagoon of