

fragment broken off, dropping in a favourable place, would become the germ of another coral plant, its base cementing by means of new coral secretions to the rock on which it might rest; or, if still in contact with any part of the parent tree, it would be reunited and continue to grow as before. The coral zoöphyte may be levelled by transported masses swept over it by the waves; yet, like the trodden sod, it sprouts again, and continues to grow and flourish as before. The sod, however, has roots which are still unhurt; while the zoöphyte, which may be dead at base, has a root—a source or centre of life—in every polyp that blossoms over its surface. Each animal might live and grow if separated from the rest, and would ultimately produce a mature zoöphyte.

V. COMPOSITION OF CORAL.

Ordinary corals have a hardness a little above that of common limestone or marble. The ringing sound given, when coral is struck with a hammer, indicates this superior hardness. It is possible that it may be owing to the carbonate of lime being in the state of aragonite, whose hardness exceeds a little that of ordinary carbonate of lime or calcite. It is a common error of old date to suppose that coral when first removed from the water is soft, and afterward hardens on exposure. For, in fact, there is scarcely an appreciable difference; the live coral may have a slimy feel in the fingers; but if washed clean of the animal matter, it is found to be quite firm. The water with which it is penetrated may contain a trace of lime in solution, which evaporates on drying, and adds slightly to the strength of the coral; but the change is hardly appreciable. A branched Madrepora rings on being struck when first collected; and a blow in any part puts in hazard every branch throughout it, on account of its elasticity and brittleness. The specific gravity of coral varies from 2.5 to 2.8: 2.523 was the average from fifteen specimens examined by Prof. Silliman.

Chemically, the common reef-corals, of which the branching *Madrepora* and the massive *Astræas* are good examples,