

Europeans, who dive in armour. Taking pearl-fishing in the coral islands of the Pacific upon the whole, I do not know any occupation connected with the sea in which the men engaged are so little liable to accident. Of course it can only be successfully practised by persons of experience; the divers must be amphibious—born to it; the directors, men acquainted with their language, habits, and wants. The employment of diving apparatus has frequently been suggested; it is used on the coasts of Colombia and Guatemala; in the Pacific Isles it has never yet been tried in pearl fishery, and, except in a few instances, it will not answer; the nature of the bottom will not permit it. I will explain this hereafter, when describing more minutely the mode of procedure.

Referring to the origin of coral atolls, like those of Paumotu, it seems most probable, as has been suggested by Darwin, that they are relics of an ancient continent, the peaks of a sierra, which, having been undermined by volcanic fires, have sunk down and left behind them their fringing reefs or coral crusts, which, during ages of their existence, had accumulated around them. This metamorphosis may have been effected at once, or gradually in the course of many centuries; in some cases comparatively recently, as in the instance of one island of Tokerau, where the bottom of the lagoon is still strewn with the trunks of gigantic timber which formerly grew upon the land of which it has usurped the place. That coral will not grow at vast depths in the ocean is now well known; consequently the reefs which appear on the surface of the waters have been deposited upon and around submarine eminences which have in many cases settled down and disappeared. Some are of opinion that all lagoon reefs have been built upon crater lips, which cannot have been the case, from the fact that the lava flow could not in every instance have broken out upon the leeward side, as is commonly the position of the gaps or passages through the coral barriers. Again, it is usual for mountain peaks to be left standing in the very centre of the crater immediately over the funnel, as would have been in the case of Uvea, Hogolen, Palao, and other similar great atolls had it been so. It is true that their nuclei are igneous rock, but it seems more rational that their submersion had been arrested in some way, else that they are still slowly going down. The old idea of coral isles having been built up from the bottom of the ocean by the labours of an insect must now be abandoned, forasmuch as coral is not a mere concretion but a true vegetable, as may be readily perceived by examining it in all stages of growth, from the time when it first appears like a tender fungus, soft and leathery, which, under the naked foot, feels like a cushion of moss, to the stony petrification in some species solid as marble. It is true that, like sponge, it has been fitted by Providence for the habitation of animalculæ, but the animalculæ do not produce it. As to how the pearl oyster is propagated in coral lagoons, is involved in considerable obscurity. I have no theory upon the subject; I can, however, supply certain data from long observation. Two islands of apparently precisely the same character, as far as natural formation, outflow and influx of the tide, depth of water, &c., are concerned, may be found within a few miles of one another, (as is frequently the case), yet the lagoon of the one swarms with pearl oyster, while in that of the other not one has ever been found. You will say, "Why not transplant them, as breeders do oysters?" This has been tried, not only in our time, but generations ago, without any success, by the aborigines, to whom pearl shell has always been most valuable, not only for ornament, but because for very many most necessary purposes it supplies to them the use of metals, as for the making of dishes, spoons, fishhooks, knives, and a variety of implements. Consequently, on islands where it was not indigenous they were most anxious to obtain it, and with that view made repeated attempts to introduce it into their own lakes, by carefully transporting the young shells attached to pieces of rock from one island to another, keeping them all the time in pure sea-water, but never succeeded. Moreover, there is no tradition of pearl oysters having once existed in a place and having become extinct; consequently there is some condition necessary to its growth with which we are unacquainted. There is no variety in the species, but very much difference in size and thickness to which it attains in diverse localities, as also in the production of pearls of value. For some of these peculiarities there is a way of accounting. The pearl oyster of the Pacific dislikes sand, and will not live upon it or grow to its full size in its immediate vicinity—that is to say, in a tide wave or where the sand pollutes the water. In still lagoons where the sand lies at a depth and is never moved, the pearl shell grows well on the rocks which rise out of it. But this fish most delights in the great caves and hollows of the clean-growing coral, where the waters are limpid and altogether free from such extraneous atoms as might irritate and annoy it. In such situations it grows to a great size (sometimes as much as 18 inches in diameter). These huge bivalves in those places frequently attach themselves to the roofs of caverns, sometimes a dozen being linked together by the strong fibrous threads whereby they make themselves fast; a rich prize for the diver, who is obliged to separate them with his knife, and from exceeding weight to make more than one plunge before securing the whole of the congeries. As a general rule, in well-fed and clean grown fish such as these, pearls are seldom to be met with. When that is the case, they are usually of considerable value, being large, well-formed, and pure. The oysters which produce the greatest numbers of pearls are thick and stunted, having a scabby and deformed appearance. There is a colour about their cable (or attachment whereby they hold on to the rock) unmistakable to an experienced fisher; so much so, that such a one, as in my own case, could with safety lay a wager to pick out from a boat-load of unopened oysters at least 75 per cent. of those which contained pearls upon a most cursory examination. There can be no doubt whatever that the production of pearls is, in most cases, the result of some disease or inconvenience suffered by the fish. Instances are occasionally met with in which oysters in an apparent state of perfect health and large growth contain pearls, usually then only one, and that large, round, and beautiful. On the other hand, in some distorted and scabby-looking shells, one will find, at times, twenty or more pearls (there have been instances of 100), small, shapeless, and of no value. Some have supposed that the irritation caused by the presence of parasites in the shape of small red crabs and lobsters, which infest the pearl oyster, and must cause it very much annoyance (forasmuch as their nippers are sufficiently strong to inflict at times a disagreeable pinch upon a man's fingers when engaged in opening the shells), were the cause of pearls being formed; but this cannot be the case, for the reason that these creatures seem to exist in the greatest numbers in large, clean, and healthy shells, in which are no pearls. Pearls of value in Pacific lagoons are not plentiful, though in some localities one may usually depend with certainty on finding them in sufficient quantity to cover the expense of getting up