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A THEORY ON THE ORIGIN OF THE COCONUT

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THE COCONUT has never been found in an unquestionably wild state. It perpetuates itself and occurs spontaneously in certain places, especially on coral islands, but apparently nowhere that it was not most likely brought by man. It is a typical cultigen, in its unusual development of the useful part, the fruit, in existing in a myriad of varieties, mostly characterized by differences in the useful organs, in this case especially the fruit (Chiovenda 1923, &c.), in having difficulty maintaining itself in competition with natural vegetation without the aid of man (Cook 1901, 1910), and in having an obscure origin. Its remarkable fruit has long attracted attention, and the ability of this fruit to float and to survive long immersion in sea water has given rise to many speculations as to attainment of its wide distribution by floating across the seas and drifting ashore to colonize remote islands and even crossing the Pacific from Asia to America or *vice versa*. Actually, however, it has never, to my knowledge, been found on an island where there are no other indications that man has lived also. I have seen coconuts, though rarely, sprouting where they have drifted ashore and have been cast up on the top of the beach. This has always, in my experience, been where there were planted coconuts nearby.

The place of origin of the cultivated coconut has been the subject of much speculation. The other members of its tribe, the Cocoinae, are native to America, except for two African genera and an African species with a congener in America. This led O. F. Cook (1901, 1910) to build a theory that the original home of the coconut is, contrary to most reliable historical evidence of occurrence, in America away from the coast. He says (1901, p. 292), "The original habitat of the cocoa palm is to be sought in South America, the home of all other species of *Cocos* and of most of the closely related genera. More specifically the probabilities favour the alkaline regions of the Andes of Colombia, where it has been reported by Cieza de Leon and Humboldt in valleys remote from the sea."

Beccari, on the other hand, stressing the preponderant occurrence on sea-shores and the inability of the cultivated plant to stand competition from forest trees which cut off its needed light, finds its origin in the Old World on coral islands. This idea is not incompatible with the theory presented below.

Chiovenda (1923) agreed with Beccari that the original home must have been on a coral island. Because of evidence that the migration of the coconut has been from west to east, the facts that the other genera are in

Africa and America, with fossil occurrences in Europe, and the fact that man seems to have been the means of dispersal in the Pacific, he places its origin on a coral atoll in the western Indian Ocean.

These principal previous theories, backed, each by enormous masses of evidence, interpreted quite diversely deal mostly with the original home of the coconut. The preponderance of evidence seems to be that it is, indeed, an Old World plant, as claimed by Beccari and Chiovenda. That it is a true halophyte, dependent on a coral limestone substratum, is not conclusively demonstrated, but need not be debated. The plant certainly thrives also away from the sea, so it is probably, like many so-called halophytes, merely better able to endure salt than most plants. The two later of the theories are plausible enough as to the kind of original habitat, though not conclusive. The localizing of this habitat in the western Indian Ocean by Chiovenda, while again possible, is not convincing. All three of these writers speak of the coconut apparently in its present form.

None of them has considered any possibility that in its wild state it was any different from the cultivated plant. They have not specifically regarded it as a cultigen, created, in its present form, by man.

I would like to suggest that the coconut may have been domesticated from a wild species growing somewhere in the present optimum range of the modern coconut. Logically this would have been a palm with a smaller, less satisfactory fruit. If the habitat were a favourable one, also, for man, he might well have occupied it completely, very possibly for ages living on the fruits of the wild palm. Common sense would have led to the preservation of the trees with larger fruits when trees were cut for cabbages or timber, and to the planting of the largest nuts to replace cut or fallen trees. Thus, over a long period of time, as the tree was domesticated it continuously replaced the earlier, less satisfactory, forms. As the plant became more and more useful, it would have spread, through the agency of man, over a larger and larger area, radiating from the original centre of domestication and original habitat of the wild plant. Thus it may well have completely replaced its wild ancestor. This would leave no conceivable way to locate the actual place where the wild plant occurred except by discovery of fossil or archaeological material. Beccari's idea that it may have lived on a coral island is attractive. Most low coral islands have probably been submerged for at least a period since the Pleistocene, this helping to account also for the complete disappearance of the wild plant. However, since the coconut is also quite at home in lowland tropical continental coasts and high islands there seems no way to narrow the possibility down to a coral island.

It may be pointed out that the domestication of few plants have had such a profound and widespread effect on humid tropical vegetation as has the domestication of the coconut. Vast areas of lowland tropical vegetation have been replaced by coconut groves, even during prehistoric times. Even the popular concept of tropical vegetation is largely dominated by *Cocos nucifera.*

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