Castaway coconuts

Had you lived in the Maldives in centuries long past, you might just have stumbled across a huge "nut" – the largest in the world – washing up on your beach. There would be no mistaking it, its remarkable shape and size identifying it beyond all doubt (Figure 1). Unfortunately, you wouldn't have been able to keep it; local law demanded (upon pain of hand amputation or even death!) that it be immediately turned over to the king. These rare, exotic curiosities, then believed to have a plethora of medicinal (and aphrodisiacal) properties, were worth a small fortune across the Indian Ocean, China, and Europe (that is, before a French sea captain trashed the market in 1769, but more about him later), hence the royal interest. However, as you left the ruler's court, no one could stop you pondering where the thing had come from. Indeed, nobody knew – nor could they have guessed the biological tragedy that its unveiling would reveal.

Certainly, no tree in the Maldives produced these "double coconuts". Nor was one known in India, Ceylon (modern-day Sri Lanka), the Malay Peninsula, or any of the other lands from where the bygone sailors and traders who plied the waters around the Maldives hailed. This lack of a clear, terrestrial origin, plus the fact that these huge seeds were more commonly found floating in the sea, led to the belief that they were produced by trees that grew on the ocean floor. Some marine-origin stories were, however, a bit more fanciful than others. Antonio Pigafetta, who sailed with Magellan on his round-the-world voyage, wrote in his 1525 account of that trip about a fabled tree (home to the Garuda, a fantastical, gigantic bird) that grew in the ocean, surrounded by whirlpools, somewhere beyond Java, that produced a fruit known as a "Buapanganghi…larger than a watermelon", and that "those fruits which are frequently found in the sea came from that place" (from *The First Voyage Round the World by Magellan*, printed in 1874 for the Hakluyt Society, London). You get the feeling that not even Pigafetta believed it, but that didn't stop these "fruits" becoming known in Europe as *cocos de mer*, which is French, giving me the perfect segway back to that sea captain fellow.

Alright, you now need to know. These enormous seeds are produced by a palm tree that grows not on the seabed, but in the Seychelles: namely, *Lodoicea maldivica*. The person to figure this out was a chap known as Barré, who sailed with Marc Joseph Marion Dufresne to the then-uninhabited Seychelles in 1768 (if the mystery was ever solved by anyone who sailed that way before the French got there, no trace of that discovery is left). Another French seafarer, Lazare Picault, did record these palms growing on the islands in 1744, but he failed to put two and two together and connect the nut with the tree – arithmetic that Barré got right. Doing more mathematics, Jean Duchemin (*this* is the guy), who took command of Marion Dufresne's expedition when the latter got sick with scurvy, figured that he could clean up – monetarily speaking – by taking a boatload of *cocos de mer* over to India (history junkies should see Guy Lionnet's erudite account in Volume 2 of the *West Australian Nutgrowing Society Yearbook* from 1976: https://tinyurl.com/4z5hyknm). After that, well – no one pays curiosity shop prices for what you can get in a big-box store.



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Figure 1. A *coco de mer*.

These days, *L maldivica* grows wild only on the islands of Praslin and Curieuse in the Seychelles archipelago; human activity has seen to that. The few thousand that remain are protected, and the export of their seeds regulated, for despite Duchemin's enterprise, they still fetch a poacher's price. But I promised you a biological tragedy, and here it is. No matter how hard the ancient kings of the Maldives might have tried, none of the *cocos de mer* delivered to them would ever have grown a *L maldivica* palm. They would all have been dead. You see, these double coconuts are not like ordinary coconuts (*Coco nucifera*) that wash up on the shores of the Indian Ocean ready to sprout and grow. When *cocos de mer* drop from the trees they are viable, but weighing in at perhaps 20 kg they are so packed with stored food (an adaptation that keeps seedlings alive for two years while they try to reach the light) they are too dense to float. Only when the husk rots away, and the embryo has germinated, or it and the flesh inside have decayed (perhaps forming a little gas), does their density fall enough to allow some buoyancy and thereby travel on ocean currents, by which time it's far too late for it to be a method of dispersal. *L maldivica* might produce the biggest seeds in the world, but, surrounded by sea, it is a species marooned on the Seychelles, a castaway ever trapped in paradise.



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