

Home of the Coconut

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INTRODUCTION

THE intricate problem of determining the home of the coconut had been discussed in the past by a host of workers (Paget 1929; Cook 1910; Mayuranathan 1938). A perusal of these contributions revealed that, while they presented considerable evidence and enriched our knowledge on the subject, the task of tracing the home of the coconut still remained enshrouded in mystery. The wide dispersal of the palm, its antiquity in most regions of the tropics, conflicting views on its origin presented by research workers and the lack of convincing and conclusive evidences in support of its origin in a particular region had rendered the task very difficult. However, it undoubtedly formed an interesting field of research to reconsider it in the light of new evidences available from a wide and interesting field of sciences, viz., agronomy, botany, geographic history, philology, etc.

Burkill (1935) presented three theories prevalent on the history of origin and distribution of the coconut. According to the first, the palm came from

the stock which gave rise to the American members of the genus *Cocos* and originated in the northern end of Andes in Tropical America from where it was taken into the Pacific by prehistoric investigators. The second theory is that from a place of origin on the coasts of Central America, the equatorial currents of the sea transported it to the Pacific Islands. According to the third, which is more generally accepted, it is supposed to have originated in South-east Asia or in the Pacific from where it reached America.

Mayuranathan (1938) and Child (1953) pointed out that in tracing the home of the coconut, its intensive cultivation, its concentration, occurrence of greater number of varieties and species, prevalence of a large number of names for the coconut, record of fantastic legends connected with its origin, discovery of fossil coconuts, prevalence of religious customs involving the coconut in worship and ceremonials, etc., in a particular region have little or no bearing in determining its origin. It appears, therefore, necessary to consider the whole area of its dispersal and then

re-examine the connected theories and evidences in locating the home of the coconut.

TROPICAL REGION— THE HOME OF THE COCONUT

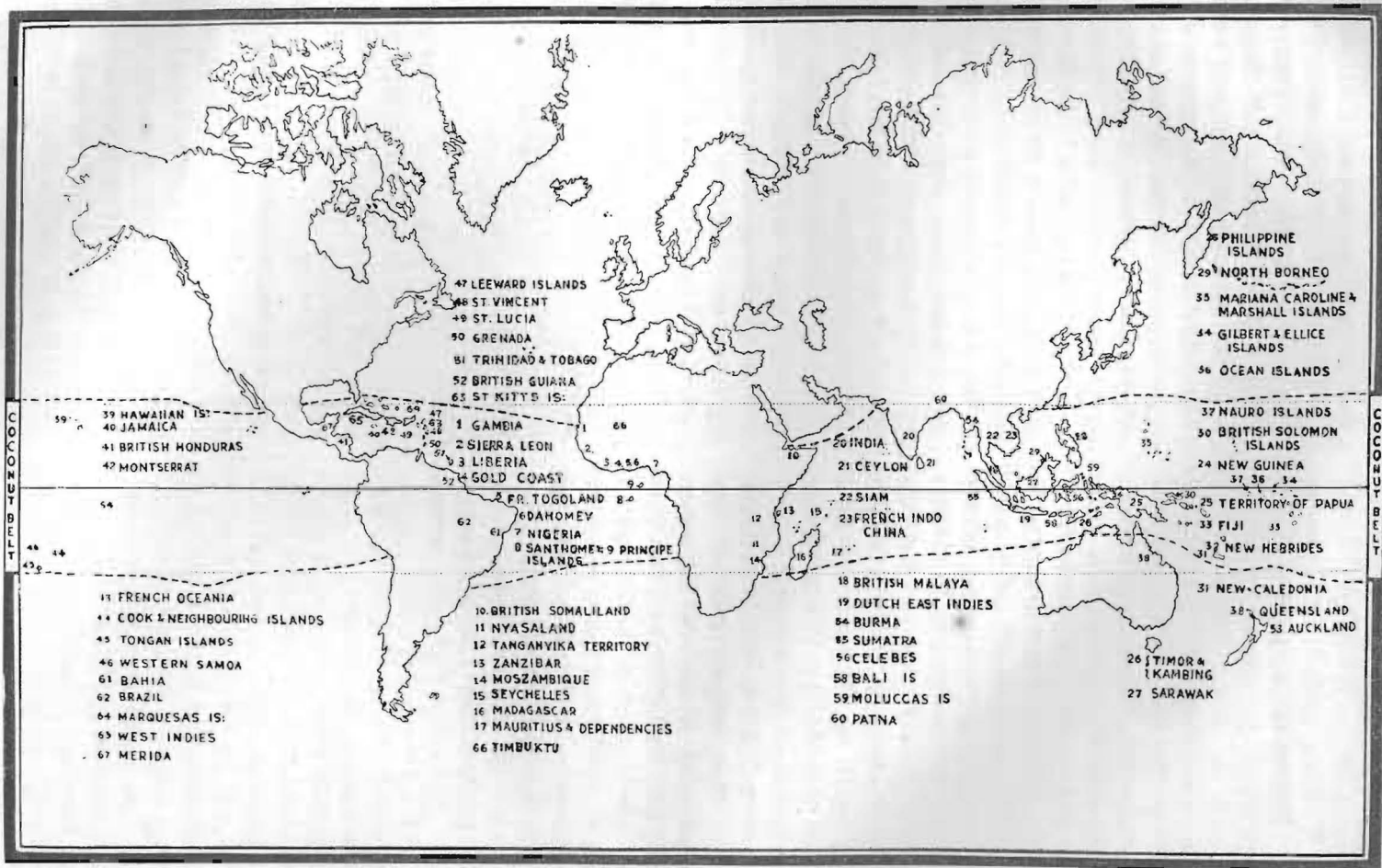
Burkill (1935) pointed out that the tree demanded certain conditions for its growth, viz., aeration of the root provided by the movement of the air through the sandy soil produced by rising and falling tides, moisture at the crown afforded by the sea breeze, and nearness to water or seas for its efficient dispersal. According to Mayuranathan (1938) the high degree of tolerance for salinity and saline moisture, rare attribute of vivipary and high degree of adaptability to dispersal by sea met with in the coconut proved that it is a seaside plant. Blatter (1926) opined that, although, it was a seaside plant, it could not altogether be termed an exclusively littoral plant as it had been met with far inland at Merida of Yucatan, at Patna in India and Timbukto in Africa. Humboldt (1817) cited its cultivation in Rio Magdalena more than a hundred leagues from the coast. Blatter (1926) pointed out that, wherever the coconut ventured beyond the limits of the tropics, it lost its elegance, power of productivity and sickened off and died after eight or ten years. In support of this he pointed out, that at the Sandwich Islands at the edge of the torrid zone, the coconut had a mean look. He, therefore, concluded that the plant could be grown successfully only at medium and low elevations in the tropics where there was either high water table or facilities for irrigation.

Considering the above facts, it would therefore, appear that the area of equatorial calms characterised by light and varied winds, heavy and constant rainfall, extreme humidity, equable climate and warmth without heat, prevalent in the coasts of the tropics could alone be assigned the home of the coconut.

The palm admittedly had a far wider spread in the tropics than most other crop plants. Sampson (1929), dealing with the distribution of this crop, pointed out that it was indigenous or introduced very early in the history of the world in India (Madras, Bombay, Bengal, Orissa and Mysore), Ceylon, Burma, Africa (Zanzibar, Tanganyika & Kenya), Federated Malaya States, Java, Sumatra, Borneo, Ocean Islands, Papua, New Guinea, Trinidad, British Honduras, Ellice Islands, Fiji, Gilbert Islands, Gold Coast, Grenada, Jamaica, Naru Islands, New Hebrides, St. Kitts, Sarawak, Seychelles, Solomon Islands and Monserrat. According to him, its introduction into Gambia, Mauritius, Nigeria, Nyasaland, St. Vincent and Sierra Leon was much later and its introduction into Tropical Australia was most recent (Vide map). It will, therefore, be interesting to consider to which of these places the origin of the coconut could be assigned.

(A) ORIGIN IN THE TROPICAL NEW WORLD

I. Origin in the American Continent:- Conspicuous absence of the species of *cocos* except the coconut, either in its wild or cultivated form, anywhere else except on the continent



A map showing the coconut growing countries in the world

of America and the discovery of a grove of coconuts by Oviedo (cited by Ridley 1930 at the Isthmus of Panama at the time of discovery of America by Columbus in 1515, led many botanists to believe that it was of American origin. Merrill (1936, 1937) also believed that the coconut having no affinities to Asiatic genera of palms could not have evolved there. Griesback (1864, 1866, 1872) entertained no doubt on its American origin. Cook (1910, 1931) was the most emphatic advocate of this theory and believed that the primitive agricultural people from America distributed it on the shores of the islands of the Pacific and Indian Oceans. Thor Heyerdahl (1952, 1954) also adduced evidence to show that the coconut was introduced into the Polynesian islands from Peru. Von Martius (1950) placed the probable origin of the coconut on the West Coast of Central America somewhere near the Isthmus of Panama.

The bulk of the botanical evidences, which was a strong one in early years, although, in favour of its American origin, had to be abandoned later. The discovery of some new forms of palms of the tribe *Coccae* in South Africa at the time of its discovery by Vasco da Gama in 1498 (cited by Child 1953), the record of cultivation of the coconut in about 300 B. C. in Ceylon (Rep. Coc. Com. Ceylon 1949) and in India in the post-Vedic times (Mayuranathan 1938) and the discovery of fossil *cocos* in the Pliocene deposits (one to fifteen million years ago) in North Auckland in New Zealand (Hill 1929) and in the Eocene deposits (fifteen to forty million years ago) in

the deserts of Rajasthan in India (Kaul 1951) very much earlier than the discovery of America were in no small measure responsible for this.

The west coast of America, as pointed out by Mayuranathan (1938) was dry and was not conducive to the growth of the coconut. This was proved from observations of Seemann (1856, 1857, 1868) who cited several instances of failure of trials in cultivation of this crop in the Panama area. Conceding that it originated there, Mayuranathan (1938) found it difficult to explain why it failed to reach West Indies and the shores of the Carrebean Seas at the time of discovery of America which was moist and conducive to its growth, till the Spaniards introduced it on the southern shores of the Carrebean Seas and the West Indies and the Portuguese introduced it into Bahia and southern parts of Brazil (Blatter 1926). He also failed to understand how the coconuts could reach distant places in the Pacific and Indian Oceans considering that the American aborigines had neither the skill nor the need to journey beyond the vicinity of their shores.

Its introduction in America later than its record of cultivation elsewhere as pointed out by Mayuranathan (1938) was also evident from the lack of native names for the coconut as well as the traditional use of the coconut in the culture and ceremonies among the aborigines and settlers of tropical America. Federici (cited in Rep. Coc. Com. Ceylon 1949) showed how the palm was brought to the west coast of America from Polynesia. This is amply

proved from the statement of Jennes (1933) who believed that the coconut plantation noticed at the Isthmus of Panama originated from nuts carried over there by Polynesian immigrants in comparatively recent times.

2. Origin in the Polynesian and Pacific Islands:- The Polynesian and the other numerous islands of the Pacific have attained at present the highest development in regard to the cultivation of the coconut. Mayuranathan (1938) pointed out that with the Polynesians as well as the islanders of the Pacific, the coconut was not only known ever since these islands came to be inhabited, but had also occupied a higher ceremonial status being worshipped as one of their Gods. Though established in other lands, he showed how the coconut had attained its highest degree of development in Polynesia and the Pacific Islands. According to him, the cult of the coconut was so ingrained in the daily life of the Polynesians that they, like the Malays, had definite names for the nut pertaining to various stages of its growth. According to Rangi Hiora (1932) thirteen names distinguished the stages of development of the coconut from the female flower to the dried seednut. Brown (1931) enumerated over fifty varieties of coconuts in Marquesas Islands, where every variety was known under a distinct native binomial while not more than two names are known from America. All the above facts indicated beyond doubt, that the cultivation of the coconut in these islands was of much earlier origin than in the Americas, although, assigning

its origin to these islands was rather difficult. The geographic history of the formation of these islands as pointed out by Mayuranathan (1938) showed that these being of coralline or volcanic nature represented geographically new islands and for this reason the origin of the coconut cannot be assigned to these islands.

All the above evidences, therefore, help to rule out the probability of its origin in America or other parts of the New World.

(B) ORIGIN IN THE OLD WORLD TROPICS

The possibility of its origin in the Old World Tropics may now be considered. Merrill (1936, 1937) contended that, although, the place of origin of the coconut is somewhat a mystery, it was undoubtedly a native of some part of the Old World Tropics. Burkill (1935), Patel (1938) and Mayuranathan (1938) pointed out how research workers were all agreed that the home of the coconut was somewhere between Zanzibar and New Caledonia. An examination of the facts in this connection would indicate to which part of this region the home of the coconut could be assigned.

1. Origin in the Indian Ocean:- The notable areas in the Indian Ocean include Tropical Africa, India, Ceylon and the pre-historic area now under seas in the western part of the Indian Ocean. It will, therefore, be of interest to examine to which of these areas the origin of the coconut could be assigned.

(i) Origin in the pre-historic area now under the seas:-

Patel (1938) pointed out that it was generally recognised that the pre-historic area from Madagascar to the Philippines should have been the home of the coconut. Beccari (1913) and Werth (1933) adduced evidence to assign the origin of the coconut to the submerged lands in the Indian Ocean in South West Asia. Burkill (1935), in examining the view of these workers, pointed out that it was not worth even an examination. Moreover, the general opinion of other workers was also not in favour of its origin in this area.

(ii) Origin in Tropical Africa:-

None of the workers thought of assigning its origin to Africa. According to Mayuranathan (1938), the Arabs from an early time called it an Indian fruit. Chiovenda (1923), an Italian historian, in one of the publications, interpreted certain reference in the work of the Arabian historians, Ibu Wahab, Abu Zaid and Albiruni, as indicating that the original home of the coconut was not far from India. Child (1953) indicated its possible introduction there by the Arabs who were trading with India or through sea drift. The biological evidence presented by Lepesme (1947) indicated that the coconut could never have originated there.

(iii) Origin in Ceylon:- The coconut was of ancient origin in Ceylon (Rep. Coc. Com. Ceylon 1949) and it was cultivated there as early as in 300 B.C. Consequently, coconut was known there by a variety of names which are mostly derivatives of the names by which it is known in India. Mayura-

nathan (1938) believed that the Singhalese names 'Pol' and 'Nirali' for the coconut were probably derived from the Sanskritic 'Phala' and 'Narikela' respectively, while the names 'Kotta Poi' for the dry coconut and 'Kurumba' for the immature fruit were derived from the Tamil names 'Kotta thengai' and 'Kurumai' respectively.

According to Patel (1938), a leper king of Ceylon in the good old days, seeing the palms flourishing almost in a wild state on the Malabar Coast, is said to have popularised it there. Mayuranathan (1938) cited a Ceylonese legend, according to which the coconut was supposed to have been brought to India from Naga Loka, the blissful region beneath the sea, by an illustrious king for worship, from where it was introduced into Ceylon. The fact that the coconut was not indigenous to Ceylon was also emphasised by others (Rep. Coc. Com. Ceylon, 1949).

(iv) Origin in India:- Considerable historical evidence is available to prove the antiquity of the coconut in India. According to Mayuranathan (1938), Cosmos, writing about the coconut in the 6th century, described it under its Sanskrit name. He also pointed out that John Monte Carvino and Marco Polo in the thirteenth century considered it an Indian fruit. He cited instances of reference to the coconut in post-Vedic works, viz., *Mahabharata*, *Ramayana* and *Vishnu, Markhandeya* and *Brahmanda puranas*. He cited a reference to it in the ancient Tamil work 'Poranarattupadai'

and the post-Vedic works like the tantras where it had been referred to as a favourite of Lord Shiva. He mentioned instances of worship in India to Varuna the Lord of the Seas represented by a pot of water with a coconut placed over it. Offering of the coconut to the seas in worship on the coconut day (Narial Poornami day) has been a popular event with the inhabitants of the Konkan Coast. Menon (1933) pointed out a popular feeling that the coconut represented 'Deva Vriksha' or 'Tree of Heaven' brought down by Lord Parasurama for the prosperity of the people of the Malabar Coast (Kerala). He cited certain customs prevailing among the Nair community of Kerala, such as the sentimental and traditional use of coconut timber and coir cots and the custom of the bridal couple bowing before the coconut inflorescence hoisted in a paddy filled 'para' in front of an array of lamps using coconut oil as illuminant. All these evidences proved the antiquity of the coconut in India.

While its antiquity in India is fairly well established, its origin in India remained disputed for many reasons. Although most of the post-Vedic works contained references to the coconut, the Vedas, the oldest work of the Hindus did not, however, contain any reference to the fruit. This indicated a later introduction, possibly in the post-Vedic period. Apart from this, the possible introduction in India by oceanic currents in the monsoon drift from Malaysia cannot altogether be ruled out. This is well supported from the fact pointed out by Bartlet (1927)

that among the names of the coconut in Malaya those of Sanskritic origin were of a later origin than others already prevalent there. This would indicate that the coconut was introduced into India during the post-Vedic period and that, in spite of the discovery of fossil *Cocos* species in Rajasthan (Kaul 1951), India cannot be considered as the original home of the coconut. According to geographical history Rajasthan Desert (Wadia 1919) was once covered over by the sea and it is possible that the fossil *Cocos* discovered represented remnants of trees brought down by oceanic currents.

2. Origin in South - east Asia including Australasia:-

The facts mentioned above leave the claim of the region of South - east Asia comprising Malaysia and Melanesia as the only probable home of the coconut. The former, according to Mollengraph, an eminent Dutch Geologist (cited by Merrill 1936 and 1937), comprised the two continental regions and an intermediate group of islands. The first continental region consisted of the areas of the Asiatic bank which included Malayan Peninsula, Sumatra, Java, Bali, Borneo and Paluan Calmian group of the Philippines. The second continental area comprised the Australian bank including the ancient continent of Papua (Eastern New Guinea). The group of islands including the unstable area between the continental banks consisting of Lesser Sunda Islands, Moluccas, Gilolo, Celebes and all Philippines except Palwan Calmian group, which had been subjected to great upheavals and depressions from

early times excluded the possibility of the origin of the coconut there. The Melanesian region extended from the equator southwards to the Tropic of Capricorn and between 145°-189° E longitude roughly extending from New Guinea to Fiji islands.

It is in this region that the coconut had attained its highest development. Besides this, as pointed out by Wegner (1924) the equatorial climate of Malaysian region was conducive to the growth of the coconut and had also been constant throughout the ages. This region, according to Merrill (1936, 1937), formed an important centre of origin of plant and animal life. The biological evidence was also in favour of its origin in this region. Child (1953) cited a close biological association between the coconut and certain animal species, like Robber Crab (*Birgos latro*), which was specific on coconuts. He believed its association with the crop could be considered as long-standing. The chemical examination of the fat of this crab revealed that it closely resembled coconut oil, while it had very little affinity towards animal fat. He, therefore, advanced a plea that it could reasonably be presumed that, when the coconut spread from its original habitat to other areas, it carried with it these crabs and, therefore, a survey of the spread of the crab would afford some clues to the original home of the coconut. A careful examination of the spread of the crab showed that it extended from Cocos Keeling Islands as far as Purdy Islands in Bismark Archepalago and from New Hebrides to Polynesian Islands of the Pacific in

this region. Child (1953) also observed that a number of insect species which are specific to the plants could afford clues for finding the place of origin. He opined that the areas where the number of insect species specific to coconut are at its maximum could be suspected to be the place of origin of the plant. He cited in this connection results of Lepesme (1947) who observed that 90% of the insects specific to coconut were met with in Melanesia, while in Africa and America it was only 4% and 20% respectively, which helped to assign the Melanesian region as the original home of the coconut.

It is in this region that the coconut was known by the maximum number of names. Heyne (1927) recorded that there are 180 names for the coconut in Netherland Dutch East Indies where it is mostly known by one or more variants of the names, such as Niyur, Nira, Nio Niog, Nyol and host of derivatives too numerous to mention. In addition, there were many legends connected with the coconut prevalent in this region. Hides (1937) pointed out the antiquity of the coconut in New Guinea by citing a fantastic legend of head hunting prevalent there. According to this, the ancient God of the islanders of Papua killed another God 'Somoali' (the God of the non-Papuan forest men and bushmen) and placed the head of the victim on the banks of the river Wamga, from which the first coconut tree is said to have originated. The people of the islands (Oranglot) took pride in calling themselves coconut people and hated the non-Papuan

bushmen and men of the forest (Orang-Hutan) and practised cutting of their heads to please their God.

The weight of the evidence is, therefore, in favour of establishing the original home of the coconut somewhere in South East Asia. To trace the precise original home of the coconut further and to localise it appeared not only fruitless but also speculative, although De Candolle (1885) traced it to Dutch East Indies, Vavilov (1935) assigned it to Malayan region (Siam, Malaya, Java), Mayurathan (1938) traced it to North West of New Guinea and Child (1953), based upon findings of Lepesme (1947), considered it of Melanesian origin.

DISPERSAL OF THE COCONUT IN THE WORLD

Having originated at some place in South East Asia including Australasia the coconut would now appear to have moved eastwards towards the Pacific and further into America. Towards the west it moved to India and Madagascar over the calm tropical waters. Although it was often referred to as an ocean going nut (Vanderlock 1937), due to its capacity to float and to germinate even after floating in sea water for 110 days (Edmonson, 1941), the possibility

of its dispersal through the agency of water alone looked altogether improbable. The seednuts floating on salt water lost their viability after some days, due to infiltration of salt water into the husk (Weaver, 1929). This was confirmed by observations of Thor Heyerdahl (1954) that coconuts packed for Kon-Tiki expedition on the raft out of contact with sea water were found capable of germinating while nuts stored below the raft were ruined on exposure to sea water. Therefore, the agency of mankind must also have been responsible to a large extent to its introduction and spread. This is significant from the fact that the Spaniards introduced it into West Indies and Southern shores of the Carrebean Sea, the Portuguese introduced it into Bahia and other parts of Brazil, Polynesian sea-farers spread it to different islands of the Pacific, the Arabs disseminated it on the African coast and the maritime Tamils together with the mariners of the Bengal Coast distributed it into the lands of the Indian Ocean.

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