

Liberbaileya gracilis

T. C. WHITMORE

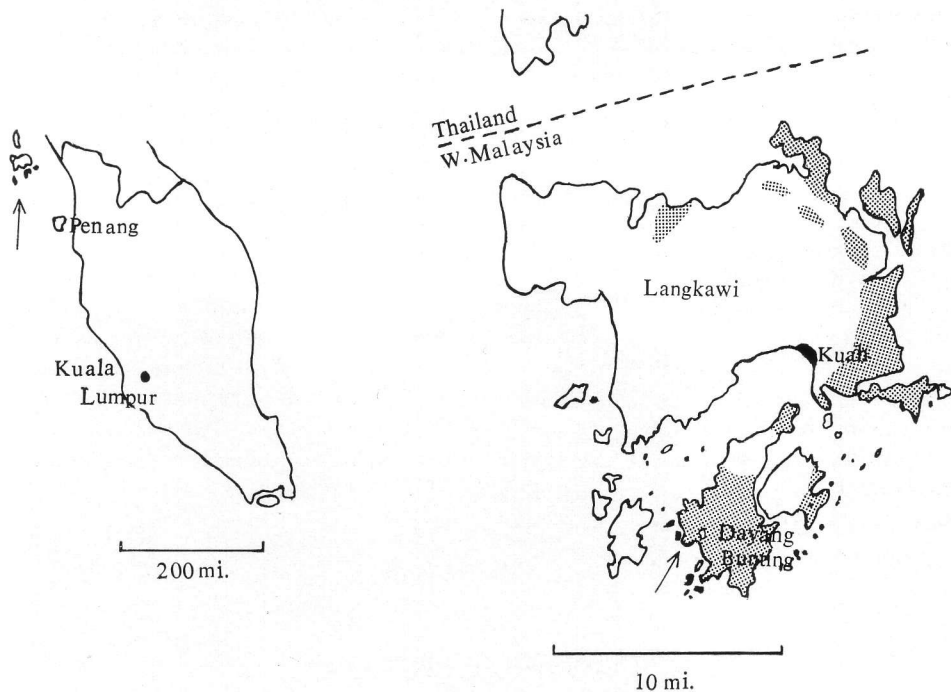
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Far from the international tourist track, and remote for most residents too, the Langkawi Islands lie twenty miles off the west coast of the Malay peninsula athwart the Thai–West Malaysia border. The islands are connected to the mainland by a ferry which crosses daily from Kuala Perlis, two and one-half hours drive north of Penang.

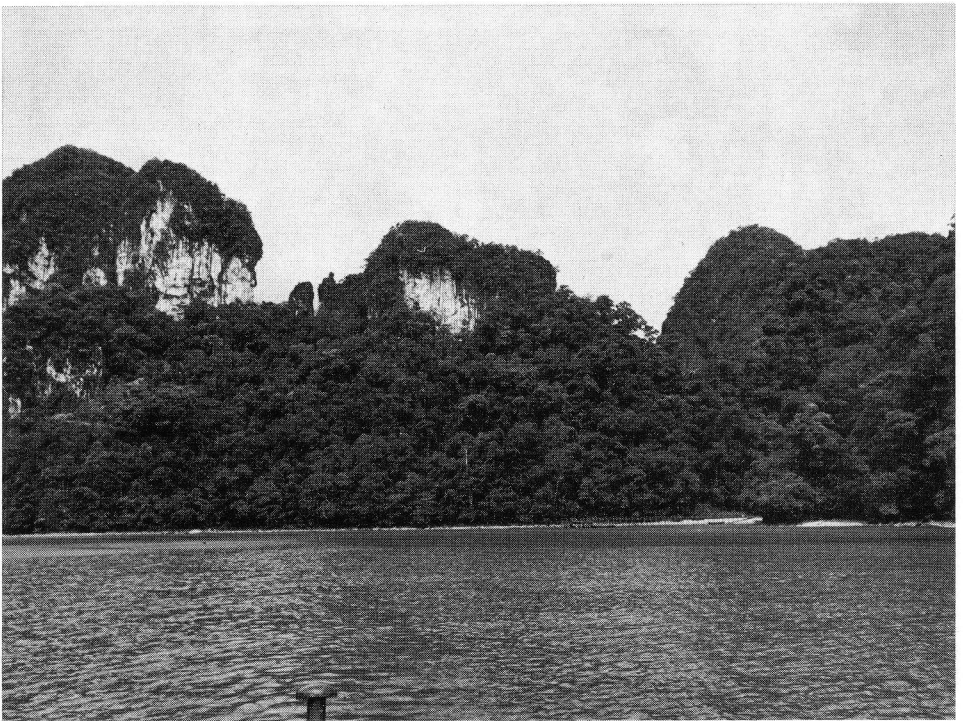
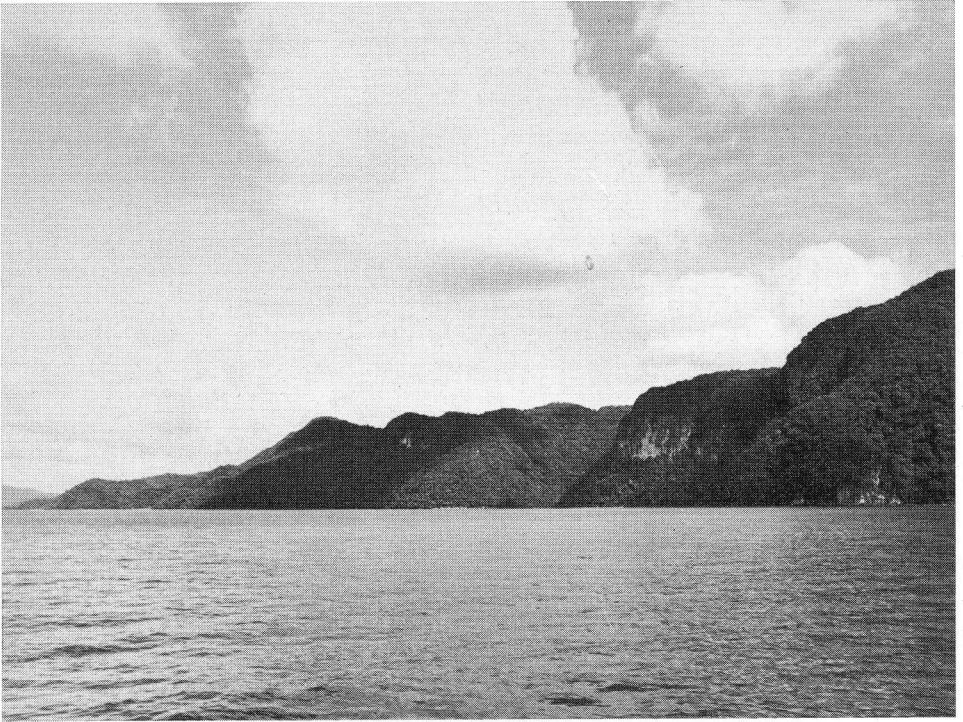
The principal island in Malaysian Langkawi has a small town, Kuah, with a government rest house and two small hotels, facing south on to the precipitous cliffs of the second largest island, Dayang Bunting a few miles away across

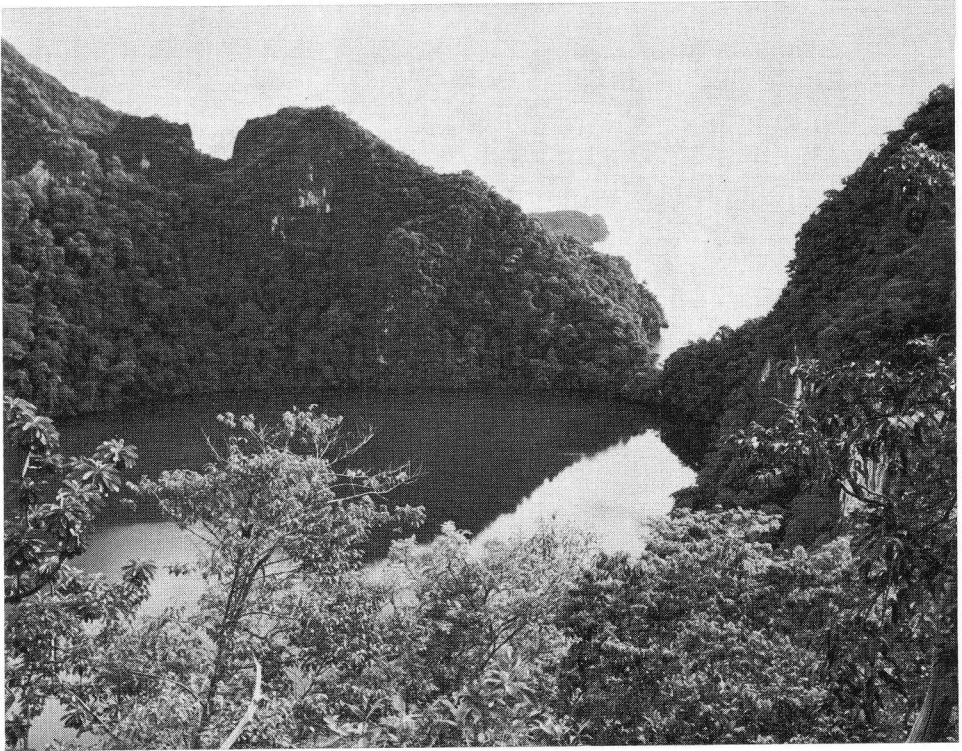
Bass Harbour. At the farther end of Dayang Bunting from Kuah, about two hours away by chinese sampan (whose hire can be arranged with the rest house keeper), grows *Liberbaileya gracilis*, an elegant, dainty, small fan palm known from nowhere else in the world.

Liberbaileya is a palm with several claims of interest. It was originally described by Ridley in 1904 as a species of *Livistona*, confused with the other Malayan limestone fan palm *Maxburretia*, and only in 1941 were the differences discovered, independently by Furtado in Singapore and Burret in Germany (see



1. Maps of region where *Liberbaileya* grows. Left: W. Malaysia showing location of the Langkawi islands. Right: Malaysian Langkawi; limestone hills stippled, locality of *Liberbaileya* arrowed.





4. The freshwater lake separated from the open sea by an isthmus only 60 ft wide; viewed from the *Liberbaileya* forest.

Moore 1967). Furtado named his two genera after the two pre-eminent palm-ologists of the day, Prof. Liberty Hyde Bailey of Cornell, and Prof. Dr. Max Burret of Berlin. He pointed out that the relationship of these palms is closer with *Chamaerops* and *Trachycarpus* of the Mediterranean and Himalaya than with *Livistona* or other tropical coryphoid palms. Both genera are restricted to very small areas of limestone. Dayang Bunting has a limestone north cape, a shale centre and a limestone southern end. There are many other limestone

hills on the other Langkawi islands. Yet *Liberbaileya* has only been found on a small part of the southern Dayang Bunting limestone. As the visitor approaches by sea he can see scattered plants on the cliffs through binoculars as he enters the strait by Batu Merah island. One of these palms was figured in the note in *Principes* by Moore (1967) already referred to, based on information and photographs supplied by Dr. B. C. Stone. The boat passes Batu Merah then enters a bay to a convenient jetty, landing point for a picturesque freshwater lake, bowled

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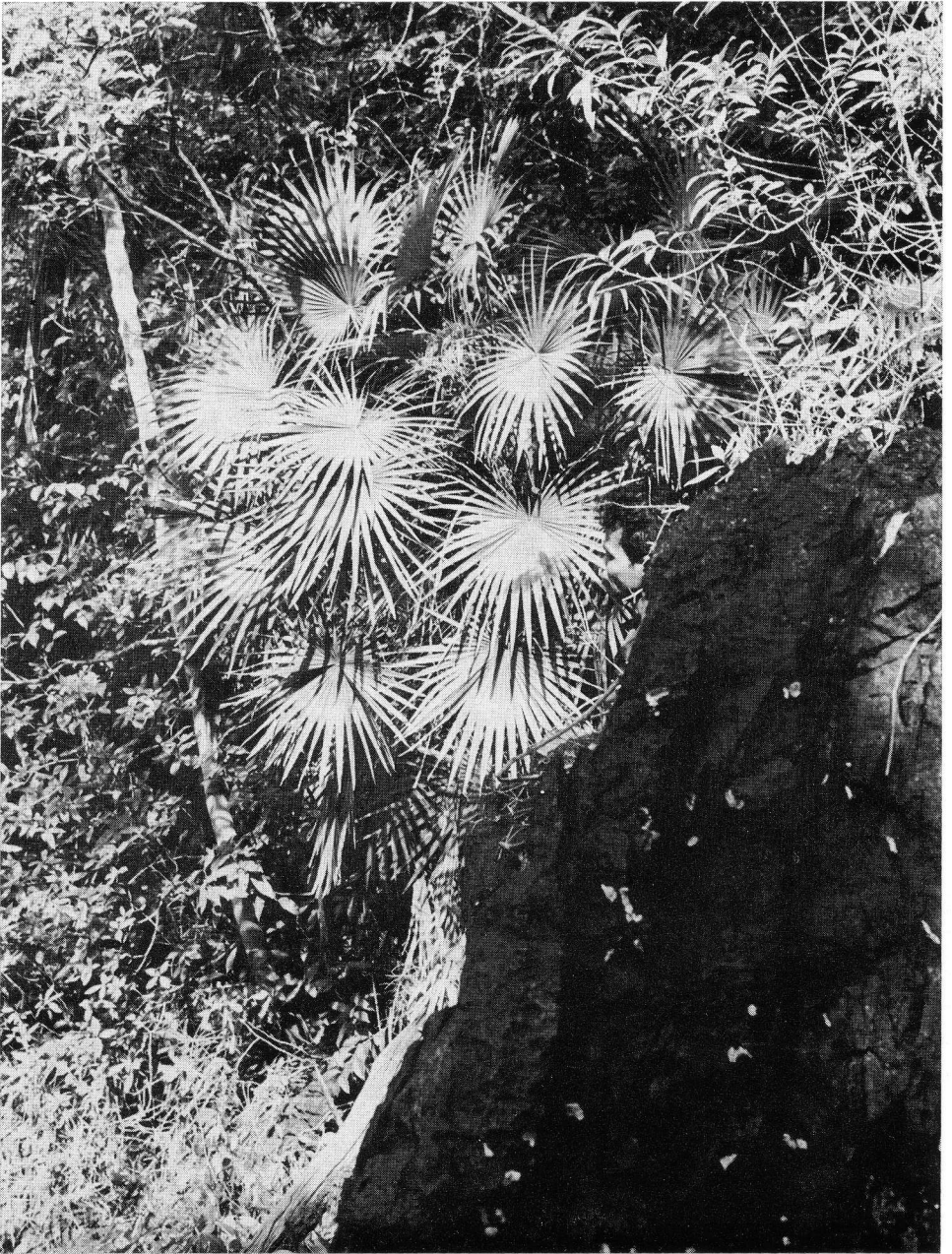
2. View northwards along west coast of Dayang Bunting island showing part of the southern limestone and beyond it the shale waist of the island. Langkawi island with Kuah at extreme left.
3. The bay and jetty on Dayang Bunting. *Liberbaileya* groves cover the top of the hill on the extreme right.



5. *Liberbaileya*, a big clump, about 20 ft tall.



6. *Liberbaileya*, with Datah.



7. *Liberbaileya*, with Mahayu.



8. The old dead leaf sheaths split in an attractive symmetrical manner.



9. *Liberbaileya* inflorescence, with Gi.

by limestone cliffs. By scrambling up the hill north of the isthmus separating the bay from the lake, extensive groves of *Liberbaileya* can be reached.

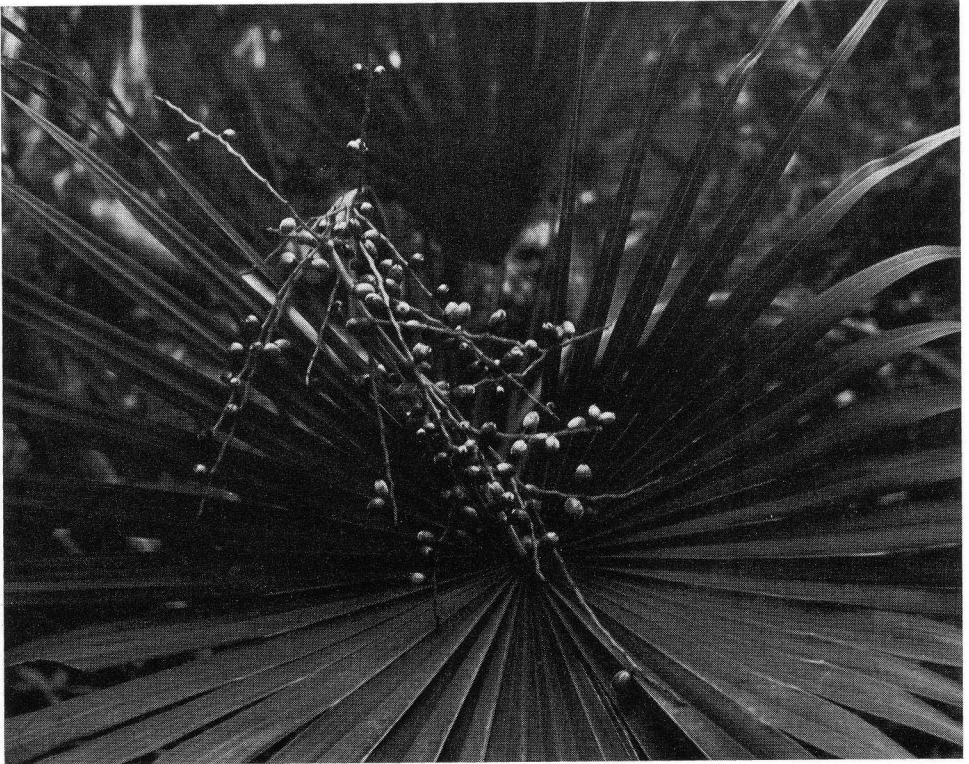
Liberbaileya is an undergrowth palm, and under the light shade of the 20–30-foot-high forest on this hilltop it is exceedingly abundant, in places dominating the undergrowth. It is rare on hillsides, and absent from the highest peaks which are more exposed. It is rare in the open. The few plants seen from the boat are atypical. The limestones of Langkawi are amongst the oldest rocks in the country. The outcrop from which *Liberbaileya* is known is thought to be of Permian age. It is hard and much altered by heat and folding. Aeons of weathering have produced a karst landscape, and because it is an impure lime-

stone, the weathering has left the crevices full of a red brown soil.

Liberbaileya forms clumps of one or two rosettes and one to four stems, and is usually 4–10 ft. tall. The stems are often slightly curved; in their upper parts they are clothed with the beautifully regularly split, grey-brown, old leaf sheaths. The roundish crown has numerous flat fan fronds deeply divided into narrow segments, pale green, and below very slightly grey with fine brown dots. Several inflorescences are borne in the crown; these comprise a 2–3-foot slender sinuous stalk with several sheathing spathes and a brushlike cluster of twisted flower-bearing branchlets at its tip. The flowers have gun-metal grey petals and cream anthers at maturity and a slightly sweet fragrance. On my visit



10. *Liberbaileya*, flowers at anthesis.



11. *Liberbaileya* young fruits, matchstick scale just visible in centre.

in mid-December 1969 I found most of the palms in flower and a few with young silvery-grey, hairy fruits. No one has ever found ripe fruits.

Furtado based his description on *Henderson SFN 29134*; it became the type of his new genus and species *Liberbaileya lankawiensis*. He also saw *Curtis 2661*, of which one sheet (Oct. 1900) has very young flowers, and a sterile collection by Fox. He describes the flowers as hermaphrodite or female and notes that both are of similar structure. His discussion and description stress this dioecism.

Burret saw a duplicate of the Henderson collection, and described the flowers as hermaphrodite.

I dissected numerous pickled flowers from my own gatherings and found them

all to be in bud or anthesis, and all fully hermaphrodite (reference collection *FRI 15053*).

I have therefore carefully re-examined Furtado's holotype at Singapore. It bears three inflorescences. I boiled up and dissected three flowers from each one. The first (a) has the flowers at anthesis, as in my gatherings, with the anther cells 0.3–0.4 mm long. The second (b) has indeed got empty anther cells, but careful dissection suggests they are old ones, as they are split all down the outer edge, and do in fact contain a few pollen grains; they are 0.2–0.3 mm long. The third inflorescence (c) bears a few young fruits and a few old flowers similar to (b). I think Furtado misinterpreted the flowers on (b) and (c) as being functionally female; I believe them

to be old hermaphrodite ones with empty withered anthers.

Rare plants everywhere in West Malaysia are today under threat of extinction due principally to the fecundity of late twentieth century man, and to his rapacity armed with bulldozer and one man chain saw; the rain forest ecosystem of the country is likely to be largely destroyed within the next decade. Fortunately *Liberbaileya* grows on limestone in a stunted forest of no commercial value and will therefore survive. Moreover it takes a determined visitor to reach Langkawi island and then Dayang Bunting, and an athletic one to reach the exquisite groves of this lovely palm, so it is unlikely to be lost to overkeen

gardeners or naturalists. Limestone hill forest is sometimes burned elsewhere in the country, and some measure of protection from fire might be desirable as Langkawi becomes more visited. On the whole, though, one can probably regard *Liberbaileya* as a symbol of the richness and interest of the plants of Malaysia, which is more likely to endure than most.

LITERATURE CITED

- FURTADO, C. X. 1941. *Palmae Malesicae IX. Two new coryphaceous genera in Malaya.* The Gardens' Bulletin, Singapore 11:236-243.
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NEWS OF THE SOCIETY

A Rare Palm From Thailand

When members of The Palm Society reached Thailand, on their around-the-world trip in 1968, they were shown a *Licuala* species native to the southern part of that country. It took their breath away with its dignified beauty. The entire leaves are six to seven feet across, although the plant itself is not large.

There are very few specimens of this palm in Bangkok as yet, but it can be found occasionally growing wild in its native area in southern Thailand. Dr. U. A. Young, of Tampa, Florida, made a slide of one plant growing in Bangkok, and standing beside it was a former government forester, a gentleman now over eighty, who had brought and planted it in his garden. Mr. Pittha Bunnag, Director of Vocational Training for the Ministry of Education in Thailand, has color slides of this *Licuala* taken in the wild, which he showed to a number of Palm Society members

when he visited the United States last year.

Everyone who saw the actual plants or the slides immediately developed a tremendous desire to own this *Licuala*,



1. *Licuala* sp. growing in a garden in Thailand. Photograph courtesy of Commander Watana Sumawong.