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A close-up of a pineapple showing individual small fruits, which fuse together on reaching maturity.

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A young pineapple topped by a crown of short leaves

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A close-up of a pineapple showing individual small fruits, which fuse together on reaching maturity.

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A mangrove tree stands on its overgrown roots and provides a shelter and breeding place for various kinds of watery life.

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Pineapple plants grow side by side with young coconut trees at a small plantation in the country.

Nanas

Like any tropical country, Brunei Darussalam has a wide variety of fruits either produced locally on a small scale or imported from her neighbours.

The best place to start if you want to buy these tropical fruits is the *tamu*, which is an open-air market found in every town of Brunei Darussalam. Many of the fruits are also sold at hawker stalls on the road-sides. Prices range from reasonable to quite expensive, depending on the fruits. But bargaining, though with uncertain outcome, is there for anyone accustomed to haggling even if only just for the sake of it or to make sure that one is not taken for a ride.

Among the fruits on sale is one of the best known not only in the country but elsewhere in the world, namely the pineapple, which is called *nanas* in Bruneian Malay or *nenas* (a slight variation in spelling and pronunciation) in standard Malay.

The word pineapple refers also to the plant, which is terrestrial reaching a height of one meter (slightly more than three feet) in full growth. The leaves are spirally arranged layers of blades around a short stem thus resembling a rosette when seen from above. Each leaf is dark green with red mottles on the surface and silvery white underneath, and serrated along the edges.

PINEAPPLE

- A versatile fruit from the New World

Since time unrecorded fruits have always been an important source of foods for both humans and animals so much so that some would not survive well without them.

Many kinds of fruits that were once growing in the wild have been domesticated to provide not only foods but also non-edible materials which a human needs in life.

Consequently the varieties of fruits found in various parts of the world are diverse, which is influenced to some extent by the variable nature of the climates they are best suited to.

Thus fruits that are normally cultivated in the tropical will not grow naturally in places with temperate climate and vice versa. There are probably exceptions to this, especially if a country has highlands where the temperature is cooler and conducive for nurturing certain non-tropical fruits such as strawberries.

On the other hand there are also

fruits that appear to be indigenous or suited only to some countries and are not cultivated in other parts of the world even though they may share more or less the same climatic conditions. For example, durians and rambutans, two of the many fruits that are grown in a few Asian countries only.



A close-up of a pineapple plant that grows well even among various undergrowths.



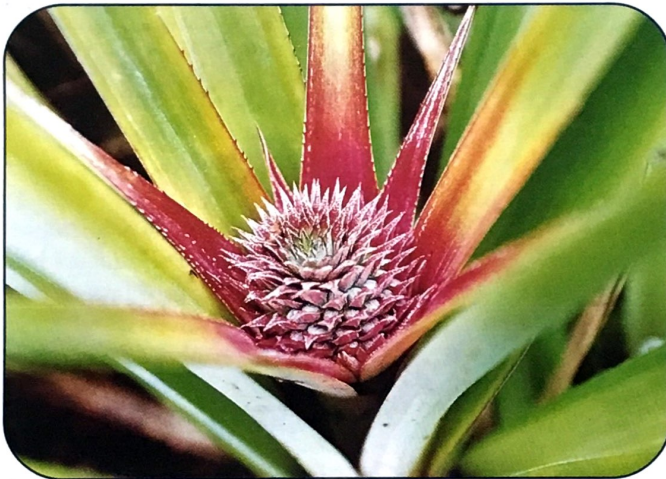
(A) The spirally-arranged leaves around a short stem resemble a rosette especially when seen from above.

(B) The pineapple at an early stage of formation, showing individual small fruits.

(C) Weeks later the individual fruits get bigger but remain practically covered by the flower calyces.

(D) Continuing its growth the pineapple fruit is no longer reddish in colour as the calyces wither, and the small fruits become firmer but still not completely fused together. A thickened inflorescence stalk support the fruit, which is topped by a crown of short leaves.

(E) The fusion of the small fruits is complete when the pineapple is nearing maturity thus making the whole skin appear scaly. The picture shows a ripe pineapple where the small fruits have fused together entirely.



(B)



(C)



(D)



(E)

Crowned

It is from the centre of the 'rosette' that the inflorescence springs, comprising no fewer than two hundreds small flowers that develop into little fruits, which gradually fuse together as they grow from the base upwards in about twenty days to form the actual fruit.

It takes several months for the pineapple to mature, which varies in size. On average it weighs around 2.2 kilograms and nutritiously contains, among other things, 80 - 85 percent water; 12 - 15 percent sugars, consisting of two-thirds sucrose and the rest glucose and fructose; 0.6 percent acid, out of which 87 percent citric; some fibre and several vitamins, which are mainly A, B, and C, with the vitamin C content varying from 8 - 30 milligrams per 100 grams.

The pineapple is an eye-catching fruit, with some interesting features: it is supported at the base by the inflorescence stalk, which grows thicker as the fruit gets bigger and extends inside it to form a fibrous core; has skin with scaly marks left by the flower calyces; and is crowned with a tuft of stiff leaves.

New World

According to historical accounts the pineapple is not native to Asia because Christopher Columbus and his fellow Europeans who accompanied him on his voyages of discovery came upon the fruit on the Guadeloupe Island in the Caribbean.

A close-up of the crown of short leaves, which is also arranged spirally and used to propagate the plant by cutting it off from the fruit and leaving it to dry for about a week before replanting.



The pineapple is propagated by various ways, including replanting the fruit's crown of short leaves or the suckers growing at the base of the plant.

Moreover, the Spanish conquistadors of the 16th century mentioned the domestication of the pineapple crop by the Tupi-Guarani Indians who lived in the regions where the frontiers of Argentina, Brazil and Paraguay now meet. Evidently

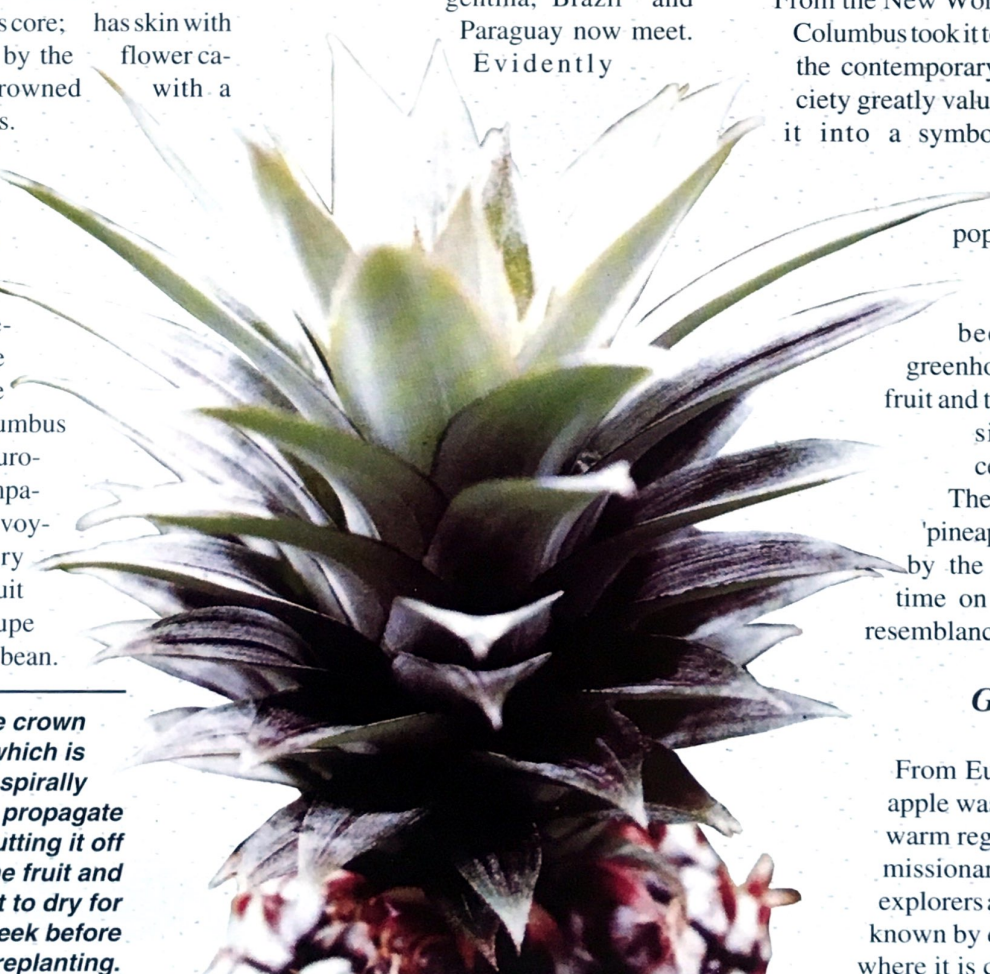
the Malay and scientific terms *nanas*, *nenas* and *ananas* are derived from the word *nana*, the Tupi-Guarani Indians' name for the pineapple.

From the New World, Christopher Columbus took it to Europe, where the contemporary European society greatly valued it and turned it into a symbol of hospitality and high status. Its popularity is evidenced in the fact that it has been grown in greenhouses as dessert fruit and table decoration since the 17th century.

The English word 'pineapple' was coined by the people at that time on account of its resemblance to pine cones.

Generic

From Europe, the pineapple was brought to the warm regions of Asia by missionaries, traders or explorers and is obviously known by different names where it is cultivated.



In Brunei Darussalam, the word *nanas* is a generic name for all kinds of pineapple available in the country and are distinguished only by the respective adjectives attached to them.

For instance, *Nanas Pisang* or Banana Pineapple in English so called probably because the flesh is as sweet and tender as a banana and *Nanas Paun* so named on account of its rich golden flesh since paun is normally associated with gold. Both are scientifically known as *Ananas sativus*, with the latter being more popular.

Another is *Nanas Hijau* or Green Pineapple, which is believed by some Bruneians to have medicinal properties that can, among other things, effectively cleansed the bowel when eaten half-ripe. The scientific term for this variety is *Ananas comosus*, which is also regarded as the most important economically and is commercially grown on a large scale for its fruits in places such as Hawaii, Mexico and Brazil.

Fibres

The other species are *Nanas Belanda* (Dutch Pineapple, probably it was introduced to the region by the Dutch); *Nanas Seberang* (Overseas Pineapple, probably originated from Indonesia because the word '*seberang*' is normally referred to that country); and *Nanas Tali* (Rope Pineapple, which turns out the fibres for making ropes). All three are scientifically labelled as *Agave cantala*, and their leaves produce the fibres that are processed into ropes or cloths.

As these species are cultivated solely for their leaves, the fruits have to be removed at an early stage since it is not possible to combine the production of fibres and fruits at the same time.

The leaves yield strong silky fibres that are made into cloth called '*Pina*' in the Philippines and Taiwan. Various accounts have also cited that raincoats were made from the same fibres in Sulawesi, Indonesia in the late 17th century.

The pineapples are also planted for



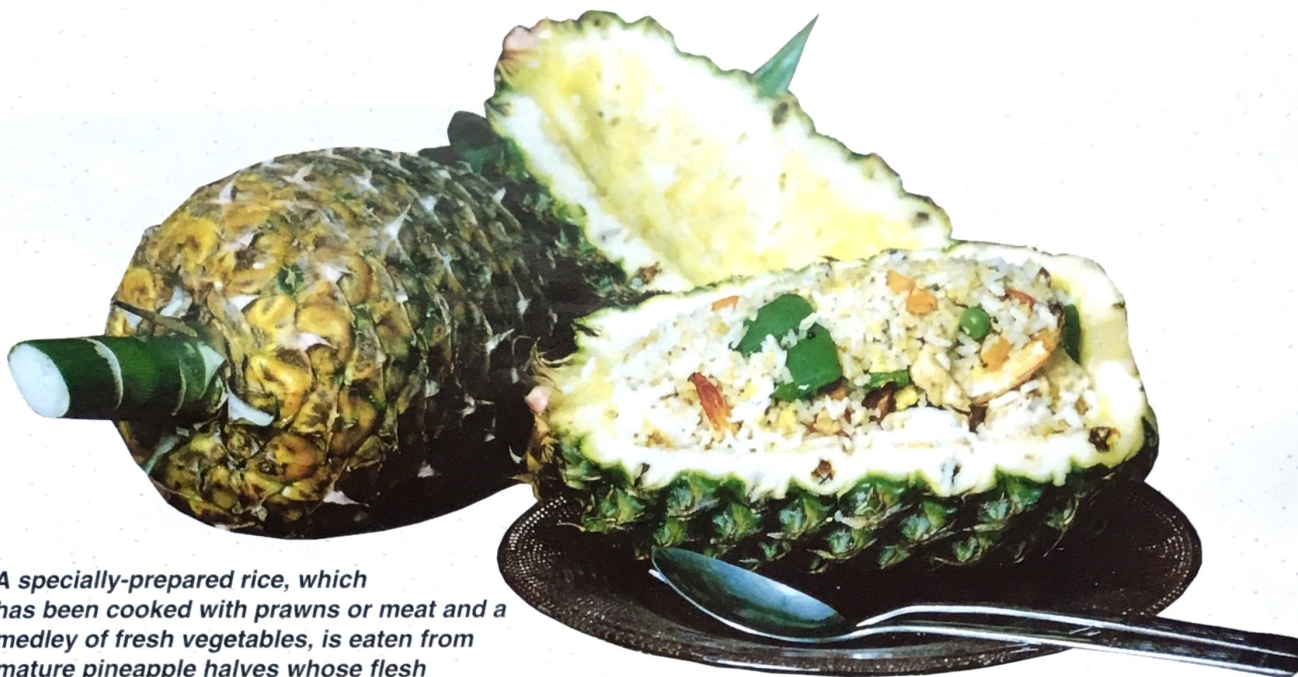
A pensive customer stares at the mound of pineapples at an open-air market quite undecided which of the juicy fruits to buy.



Slices of pineapple are among the fruits and drinks in a refrigerator being sold at a shop.



The pineapples along with watermelons, pumpkins and other fruits being sold at a typical roadside stall.



A specially-prepared rice, which has been cooked with prawns or meat and a medley of fresh vegetables, is eaten from mature pineapple halves whose flesh has been taken out; hence it is called nasi nanas or pineapple rice.

their bright flowers, flower bracts and simple greenery as they belong to the order of flowering plants, the **Bromeliads**, which contains more than 2,000 species and is found in the tropics as well as the sub-tropics of the New World.

Tank

They grow well in soils that are rich but not water-logged. It is said that the pineapples are also able to survive even in very hot and dry conditions that would render other plants lifeless. The reason for this is that the leaf stalks of each pineapple are expanded, joining together to form a water-holding 'tank' as reservoir. Water is sucked from the 'tank' as required by the adventitious roots and leaf-hairs.

There are a handful of ways to propagate the pineapple plant, including by means of tissue culture or replanting the suckers and the crown-like tuft of stiff leaves at the top of the fruit. Of these, the last two methods are the most preferred by Brunei farmers because, besides being easier to carry out, they can reap the fruits faster, namely about 18 months.

The pineapple can also grow by pollination particularly in its native home, South America, where humming-birds live on its fruit and disperse the seeds in the natural way. But the fruit borne by such a plant contains a

massive number of seeds, which is between 2,000 and 3,000. In the domesticated species, seeds are scarce and are only used for selective breeding.

Sweetness

The ripe pineapple can be consumed in several ways: as dessert fruit, vegetable such as 'sweet and sour meat', and refreshing drink. It is also used in what is popularly referred to as **pineapple rice**, an Asian delicacy. The unpeeled fruit is first cut in half and

then the flesh is taken out, leaving an exotic bowl in which is placed specially-prepared rice cooked with prawns or meat and slices of vegetables. The aroma of the pineapple further boosts the flavour of the dish, according to those who have tried it.

According to some, the best way to get the most out of a ripe pineapple is to split it length-wise from the crown to base rather than cutting it across because of the slight variation in sweetness between top and bottom.



A group of friends enjoying local as well as imported pineapple and juice at home.

Brunei Darussalam imports substantial amounts of foods and soft drinks including many brands of pineapple in tins, bottles and cartons.

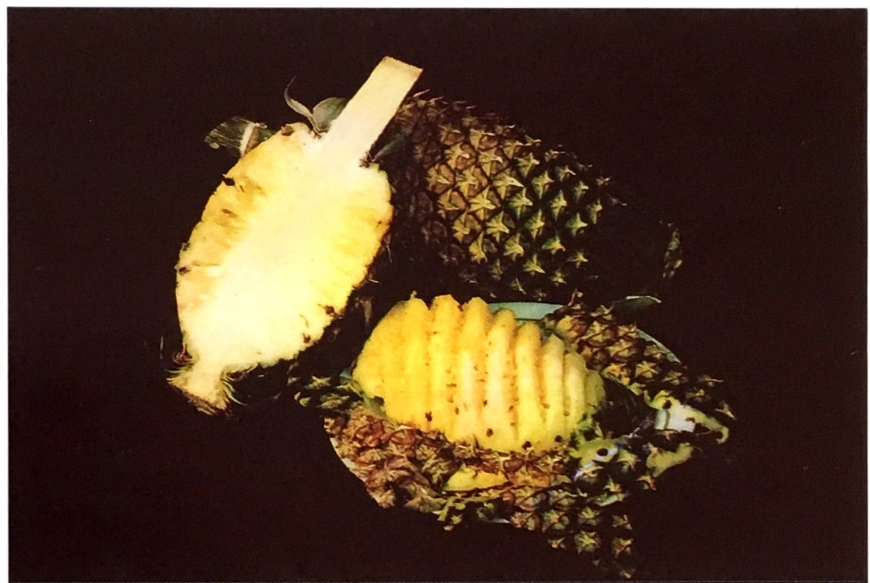


Permanency

Like many fruits, the pineapple has also been turned into a handful of products in countries that export or import it in large quantities. There are sundry industries to process it into tinned pineapple in the form of cubes or slices; tinned or bottled pineapple juice; and pineapple jam in bottles or tins. Other pineapple derivatives are citric acid (Vitamin C as in multi-vitamins compound etc), vinegar, and sugar-syrup from which alcohol can be produced.

In Brunei Darussalam, the pineapple plays a role in the creation of a *kris* (the traditional Malay dagger). It is customary - a practice as old as the origin of the *kris* itself - for the creator of the *kris* to dip every newly-crafted blade into a container of home-made vinegar in order to bring out the damascene pattern, which is called *kurau* or *pamur* in Malay, as this would make the blade stronger and deadlier.

Although the pineapple is not yet produced on a large scale in Brunei Darussalam, its long-standing popularity and existence will nevertheless ensure its permanency in the country's fruit scene.



The thick stalk of the pineapple extends through it to form a core that is slightly fibrous and harder than the flesh but edible.



The pineapple belongs to the order of flowering plants, Bromeliads, which contains more than 2,000 species. The picture shows one of the species being cultivated for its flowers in a garden.

The above article is based on the story written by Musa Mohiddin, a student of the MARA Institute of Technology, Malaysia, who was on a month and a half attachment with the Information Department.

AN ISLAND PARK

By: Painah Paiman

*L*iving in town or city does not evoke excitement and pleasure all the time. There comes a moment when one feels bored and longs for the countryside, where the air is fresher and the forests exude beauty, serenity and coolness.

Although Brunei Darussalam's capital, Bandar Seri Begawan, and other towns are neither congested nor disorderly as most metropolitans in various parts of the world, the hurly burly of urban life is nevertheless felt by many a Bruneian. Thus, as any people anywhere, the need to get away from it all is also quite common among Bruneians.

Depending on the amount of time one has on hand, it has always been the custom for some people to go overseas to unwind with shopping, sightseeing and other activities according to individual desires.

They are also others who prefer to stay and explore their own country, especially its natural attractions. On that score Brunei Darussalam is well equipped since around

75 percent of its surface is covered with lush forests and a few of them have been turned into parks for recreation, research and study.

One of these is Pulau (Island) Selirong, which is situated in the vicinity of the Brunei Bay. The idea behind the development of the forests into parks is a way to preserve the country's vast canopy for future generations as well as to provide the people with places to relax amid natural surroundings in the hope of inculcating in them awareness of the need to protect their environment. Although Brunei Darussalam does not rely on tourism as a source of income, it is also hoped that the Selirong Island and the other recreational forests will draw foreign visitors who are mature and interested in the study or research of the abundant fauna and flora available there.

With an area of more than 2,200 square hectares, the Selirong Island is covered with plants of all sorts and sizes, including mangrove trees whose trunks are reputed to be bigger than any found in the neighbouring countries.

Due to its nature of growing in the swamp, the mangrove tree is a valuable material in the building industry where it is used for piling especially in muddy soil. It is also burnt to make charcoal.

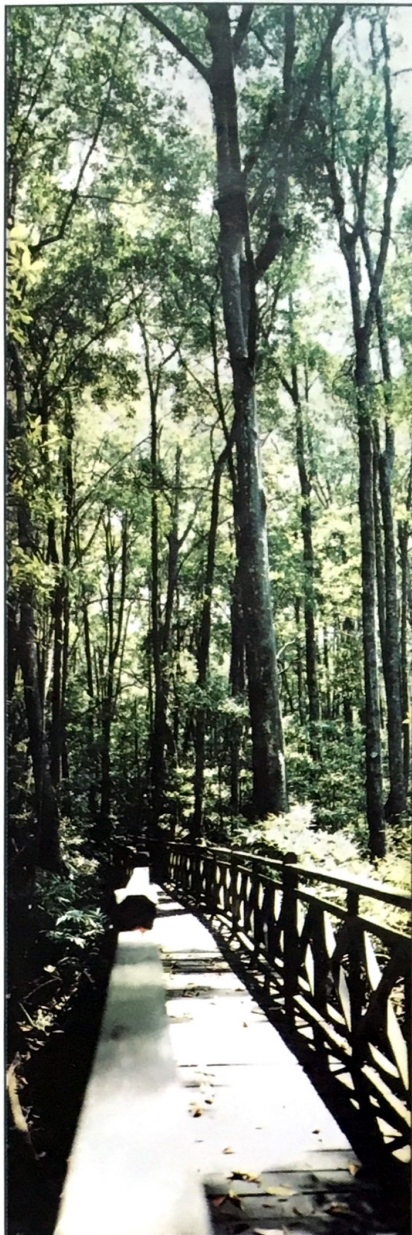
The mangrove swamps, which are an inseparable part of the ecosystem, do not only produce the trees and other plants but also provide breeding as well as spawning areas for fishes, crabs, prawns and other watery life.

The island's fauna is even more exotic in that it has, among others, the flying lemurs, which up to now have not been found in other parts of the country. If one is lucky, it is not unusual to see these animals soaring overhead from tree to tree.

The development of the island is confined to providing various facilities for day-tripper. At the moment these included two kilometre-long boardwalks, four berths, several platforms for briefing visitors, huts and observation towers.

A cruise ship weighs anchor to allow the disembarkation of its passengers who continue the journey in motor boats because of the shallow nature of the water leading to the island.





A section of the boardwalk passes through tall shady trees.

To go to the island, the visitors buy a return ticket, costing around US\$12, from the Titian Travel and Tours, which is located in the capital and has been authorised by the Government to carry passengers to and from the island. The visitor embarks the ship at the Queen Elizabeth II Jetty at Jalan Dato Gandhi, which is a few kilometres from the Brunei Museum. The jetty is named after Queen Elizabeth II of the United Kingdom, who paid an official visit to Brunei Darussalam in 1972.

The journey to the island takes slightly more than an hour. However, due to the size of the ship and the shallow nature of the approach to the island, a short distance of the travel has to be made by small boats, which will ferry the passengers to any one of the four jetties in different



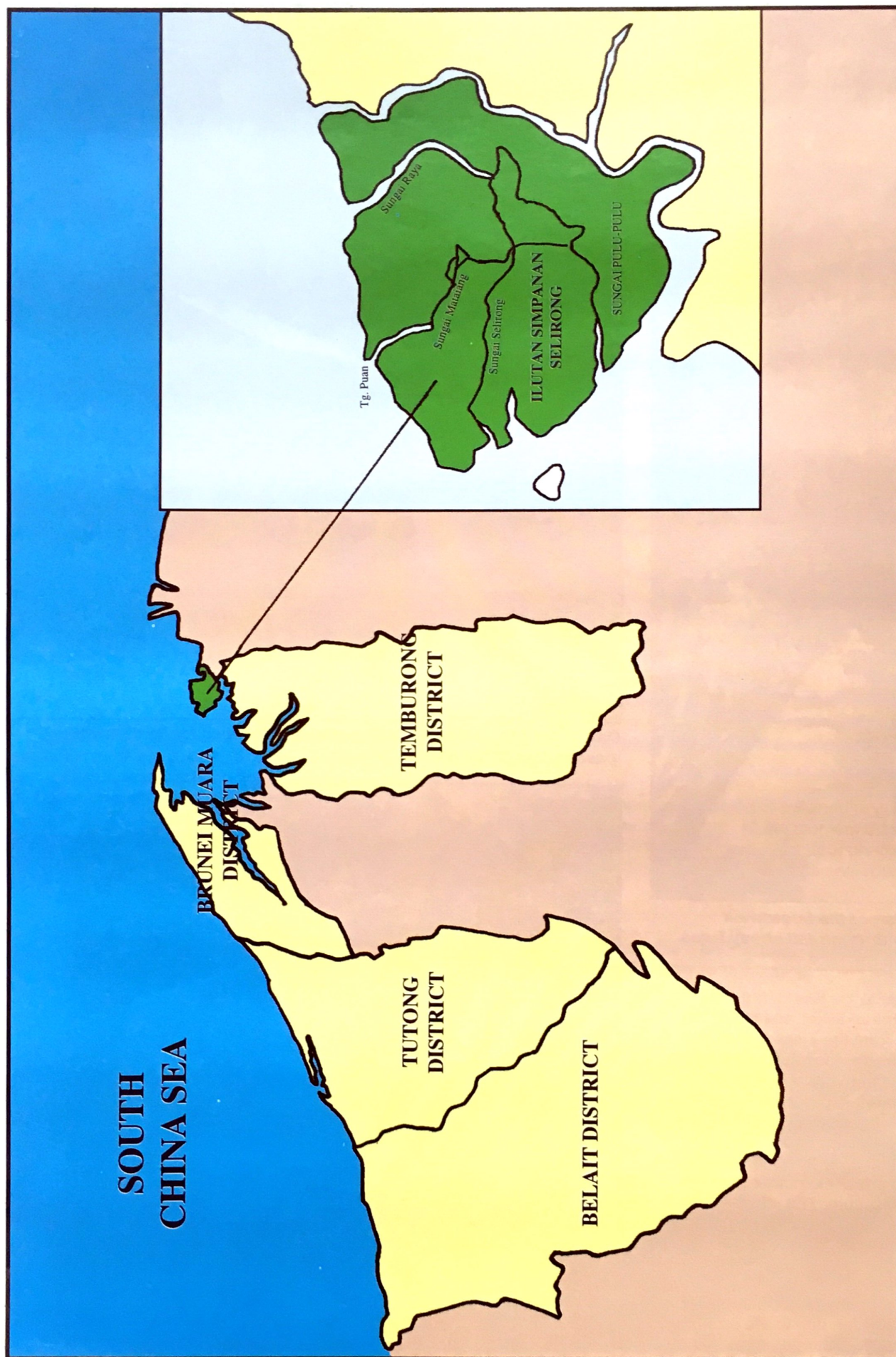
One of the four jetties providing mooring facilities for boats carrying passengers to the island.



An open platform for briefing visitors.

parts of the island.

The visit to the island should be a refreshing experience as it passes through river, sea and green jungles.

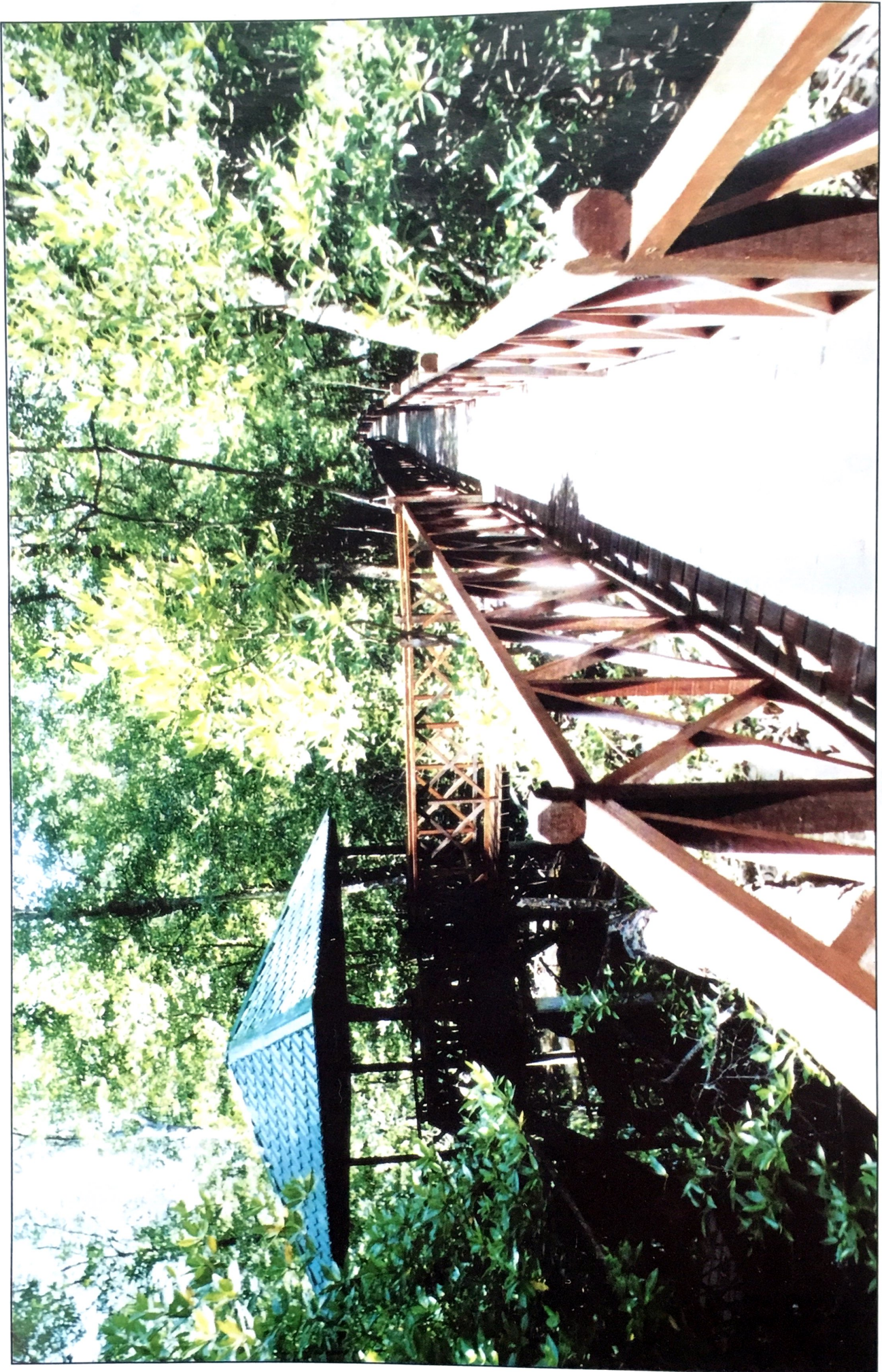




THE SELIRONG ISLAND RECREATIONAL PARK

LEGENDS

- | | | | |
|--|----------------------------------|--|----------------|
| | ENVIRONMENTALLY FRIENDLY WALKWAY | | OPEN VIEW DECK |
| | VIEW DECK | | ROUND ABOUT |
| | MANGROVE | | LANDING BERTH |
| | OBSERVATION TOWER | | TOILET |



A hut for weary visitors after a trek in the forest.



The mangrove swamps, which produce trees with trunks said to be bigger than those found in the neighbouring countries, provide breeding places for many a watery life such as fishes, crabs and prawns.



A two-kilometre boardwalk takes visitors to various parts of the island.



Among the island's abundant flora are the nipa palms, whose leaves can be used for thatching, shoots for making ketupat (a kind of traditional rice dumpling), and fruits produce edible kernels.



Giant mangrove trees with overgrown roots stand upright as if guarding another portion of the boardwalk that passes between them.



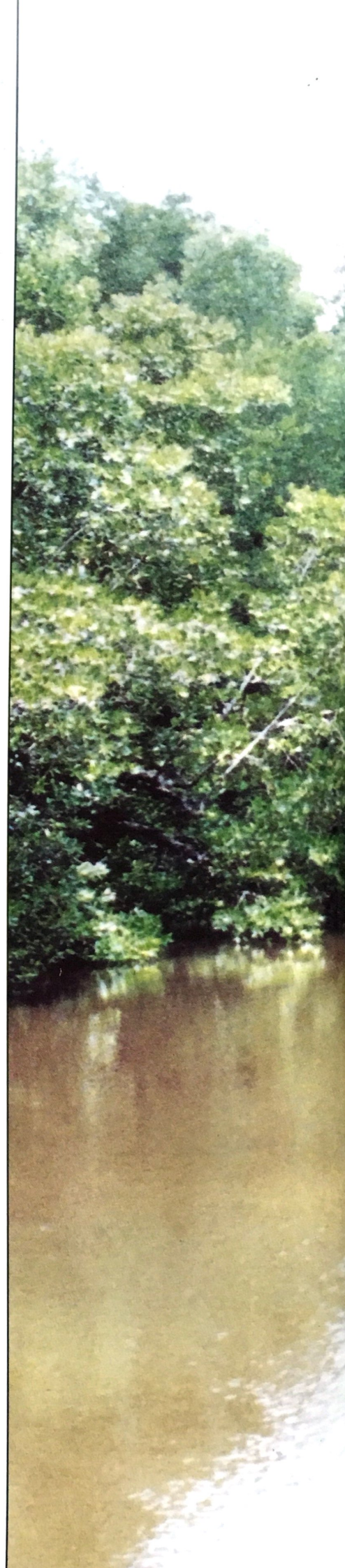
The diversity of the flora is clearly shown by this picture of only a small area of the island.



Flying foxes are among the island's fauna.



Mushrooms growing on a mangrove tree as host is only one example of the interesting aspects of the island's flora.





Lush mangrove trees line the banks of a river in the island.



The mangrove trees, besides providing shelter for a variety of fauna, play a few other roles including being used as piles for buildings and being turned into charcoal as in the picture.



A kiln where the charcoal is made.



The charcoal in the sack is correctly weighed before being sold.

A worker uses an axe to cut or split the charcoal so that it can be put into sacks. Some of the wood are also used to burn the charcoal.



A heap of sundry parts of a mangrove tree to be turned into charcoal or used as firewood to make the charcoal.



A mangrove tree stands on its overgrown roots and provides a shelter and breeding place for various kinds of watery life.