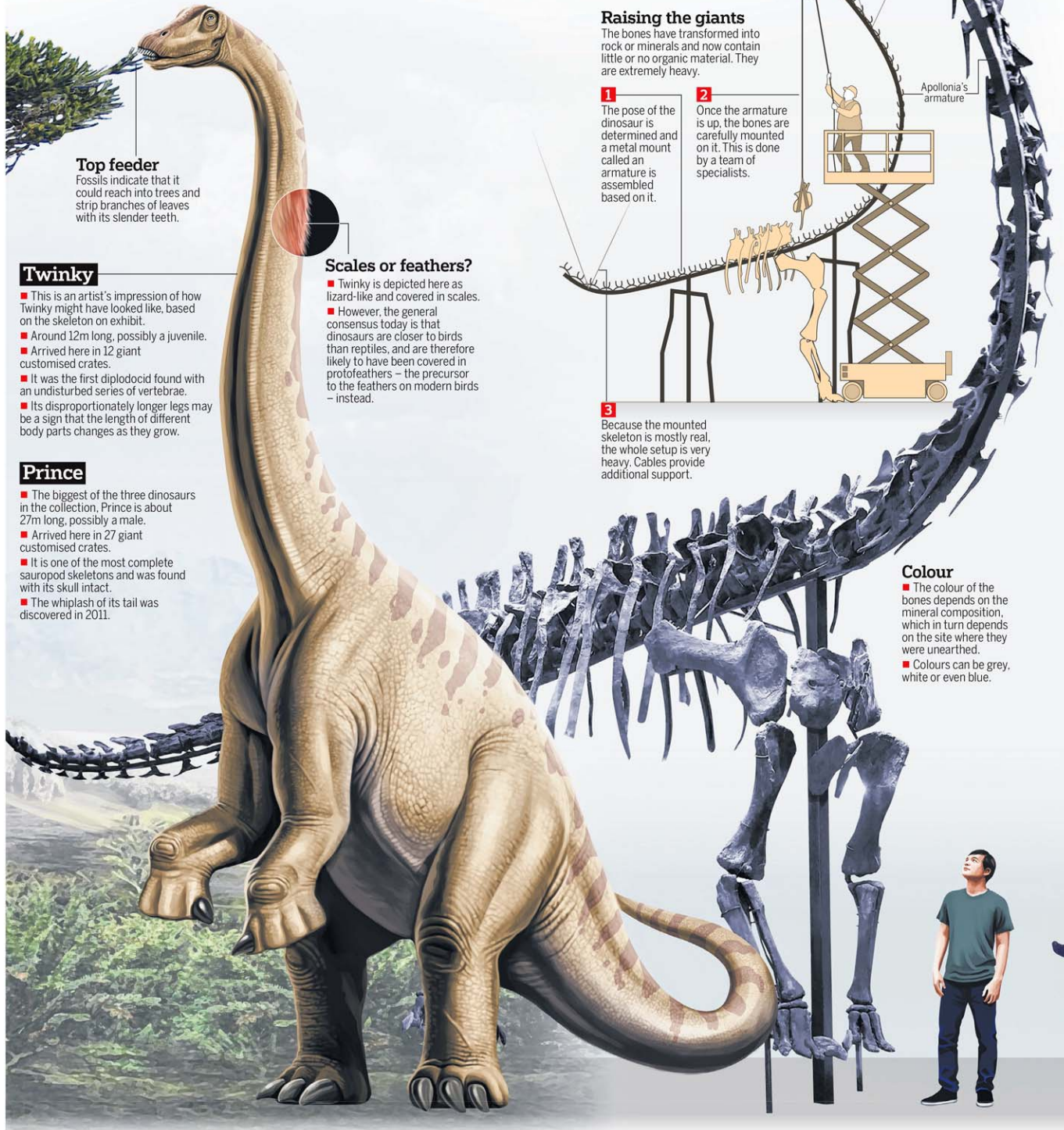
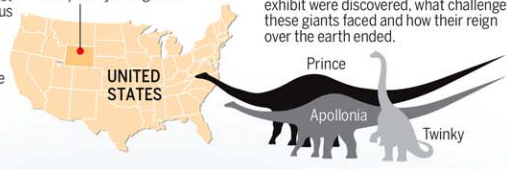


A peek into the past

Singapore's first natural history museum – the Lee Kong Chian Natural History Museum – opens on Tuesday. The 8,500 sq m museum will highlight some of its centuries-old exhibits and three dinosaurs from the Jurassic period. **Chng Choon Hiong** and **Tay Chern Hui** give a first-hand view of some of the specimens

About the diplodocid sauropod

- Roamed the earth during the Jurassic Period, some 150 million years ago.
 - Was known to be the longest dinosaur until the Supersaurus and Futalognkosaurus came along.
 - Studies revealed that the dinosaur was sexually mature 10 years after birth.
 - Weight: 10-16.5 tonnes.
 - Length: 33.5m-36.5m.
 - Height: 5m.
- Bones were discovered between 2007 and 2010 at a quarry in the small town of Ten Sleep in Wyoming, USA.
 - Visitors will learn about the fossilisation process and how palaeontologists work. They can also find out how the three diplodocid sauropod dinosaurs on exhibit were discovered, what challenges these giants faced and how their reign over the earth ended.



Top feeder
Fossils indicate that it could reach into trees and strip branches of leaves with its slender teeth.

Twinky
This is an artist's impression of how Twinky might have looked like, based on the skeleton on exhibit.
Around 12m long, possibly a juvenile.
Arrived here in 12 giant customised crates.
It was the first diplodocid found with an undisturbed series of vertebrae.
Its disproportionately longer legs may be a sign that the length of different body parts changes as they grow.

Prince
The biggest of the three dinosaurs in the collection, Prince is about 27m long, possibly a male.
Arrived here in 27 giant customised crates.
It is one of the most complete sauropod skeletons and was found with its skull intact.
The whiplash of its tail was discovered in 2011.

Scales or feathers?
Twinky is depicted here as lizard-like and covered in scales.
However, the general consensus today is that dinosaurs are closer to birds than reptiles, and are therefore likely to have been covered in protofeathers – the precursor to the feathers on modern birds – instead.

Apollonia
About 24m long and possibly a female.
Arrived here in 27 giant customised crates.
It has a perfectly preserved skull and a near-complete skeleton.
The degree of preservation is rare as the small skulls are delicate and get crushed easily.

Raising the giants
The bones have transformed into rock or minerals and now contain little or no organic material. They are extremely heavy.

1 The pose of the dinosaur is determined and a metal mount called an armature is assembled based on it.

2 Once the armature is up, the bones are carefully mounted on it. This is done by a team of specialists.

3 Because the mounted skeleton is mostly real, the whole setup is very heavy. Cables provide additional support.

Colour
The colour of the bones depends on the mineral composition, which in turn depends on the site where they were unearthed.
Colours can be grey, white or even blue.

Other attractions



Rafflesia arnoldii
This South-east Asian plant, known as corpse flower, has the largest individual flower in the world.
It has no roots or leaves and most of the time lives unobserved inside the woody stems and roots of its host.



Christmas Island frigatebird
It is the rarest endemic seabird on Christmas Island, Australia.
It has the ability to stay aloft for more than a week at a time, allowing it to have a large foraging range.
It is critically endangered. There are 2,400-4,800 adults left in the wild.



Atlas moth
The largest moth in the world by wing area is commonly found in Singapore.
It is unable to feed, and survives on the larval fat reserves throughout its entire one- to two-week adult lifespan.



Dugong skeleton
This specimen was found off Sabah, Malaysia, in 1895.
Also known as the 'sea cow', it is an endangered mammal – threatened by hunting, fishing, abandoned nets, and loss of seagrass habitats.



Leathery turtle
This specimen was found on the beach at Siglap in 1883 and, till now, it is the only leathery turtle specimen from Singapore territorial waters.
The turtle is endangered. Though found throughout the world's oceans, sightings are very rare.

What is moving over from The Raffles Museum

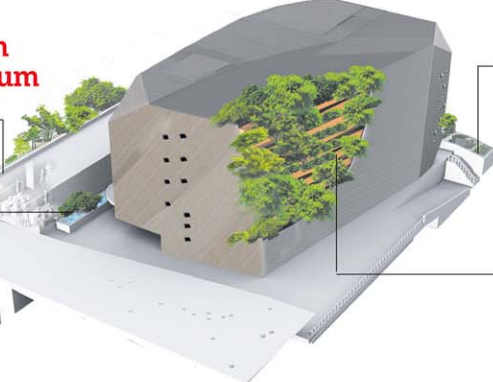
The museum was founded in 1849 by Sir Stamford Raffles, an eminent naturalist and founder of Singapore. It has one of the largest collections of South-east Asian fauna in the region and the Zoological Reference Collection is internationally renowned – containing at least 500,000 catalogued specimens.

100 LIVERWORTS	1,235 ALGAL SPECIMEN	2,500 SEA STARS	6,800 REPTILES	10,000 SPIDERS	15,000 MAMMALS	31,000 BIRDS	91,000 CRUSTACEANS	145,000 PLANKTON
700 MOSS	1,660 FERNS	5,000 CORALS	7,000 WORMS	12,400 AMPHIBIANS	30,000 FLOWERING PLANTS	80,000 FISHES	108,000 INSECTS	

About Lee Kong Chian Natural History Museum

Beach vegetation
The area recreates a typical shore profile. It starts with water, then a bare sandy beach, and leads to shoreplants and larger trees further inland.

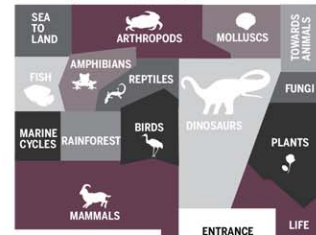
Central part of museum
This strip comprises ponds with mangrove and freshwater vegetation, and leads to a zone of dryland rainforest plants. It highlights the natural transition of vegetation.



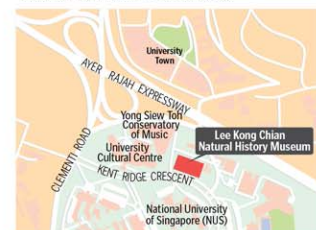
Evolution garden
Showcases the evolution of plants, starting with green algae, then moss, liverworts, horse-tails, ferns, cycads, conifers, gnetophytes and, finally, flowering plants.

Cliff vegetation
Planted with native cliff-dwelling coastal species to illustrate one found only on the more isolated islands around Singapore.

The gallery layout



Where it is located



TEXT: TAY CHERN HUI & CHNG CHOON HIONG.
ILLUSTRATION: CHNG CHOON HIONG.
PHOTOS: TAY CHERN HUI. SOURCES: RAFFLES MUSEUM



Tiger skin
Donated by a member of the public in the late 1990s.
After preserving the skin, the paws were stuffed and the skin of the head was stretched over a mould. The mould probably included the real skull, or the real teeth were implanted in a moulded skull. Amber-yellow glass eyes were added, as the tiger's eyes could not be dried or preserved.



Coconut crab
This crustacean specimen was collected from Christmas Island last year.
Known to be the world's largest land arthropod, it is able to climb up a coconut tree, dehusk coconuts, tear apart the shell, and eat the flesh inside.