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Scientists back NMP's call to protect nature

Native creatures and plants may hold cure for diseases and are under threat from development

By Chang Ai-lien
SCIENCE CORRESPONDENT

FROM the blue-blooded horseshoe crab to the tiniest emerald-green piece of moss, Singapore is home to a wealth of hidden treasures which could hold the key to a variety of medical breakthroughs.



GONE TOO SOON: 'So little is known about many of them that we may not realise what we're losing until it's too late.' - Associate Professor Hugh Tan (left), an NUS plant expert, who says conservation is critical as there is no way to predict whether a particular plant or animal might have medical potential. For example uses have been found for the blood of horseshoe crabs (right).

But while these native plants and animals could potentially hold the cure for cancer, Parkinson's Disease and a host of other illnesses, they are also in grave peril as development eats into their dwindling habitats.

That is why scientists here are firmly behind Tuesday's call by Nominated MP Geh Min in Parliament to protect Singapore's natural reserves as potential pockets of scientific discovery.

Dr Geh gave the example of a United States National Cancer Institute researcher who obtained a sample from a Calophyllum tree in the Singapore Botanic Gardens in 1992.

While it is not known if that particular sample was a success, earlier research on a similar tree in Sarawak had yielded a compound with the potential for preventing the development of full-blown Aids in patients infected with HIV.

Professor Jeyaseelan Kandiah of the National University of Singapore's biochemistry department, supported Dr Geh's argument, saying: 'There are definitely many plants and animals out there which have not been looked at, but there are not many researchers to go round and it's a matter of doing them one at a time.'

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Over the last 15 years, Prof Jeyaseelan's team has uncovered a wealth of information on local spitting cobras, kraits and scorpions, which has yielded some surprising medical uses.

The black spitting cobra, found in Singapore and Malaysia, is a prime example. While its bite can kill a person in minutes, that same deadly venom contains unique compounds that could also save lives.

One of these compounds, called nerve growth factor, could help people with neurodegenerative diseases such as Parkinson's, develop new nerves.

Another compound could cause cancer cells to 'commit suicide' or cut off their food supply, while a third could be used to diagnose diseases, such as schizophrenia or Alzheimer's.

Singapore-based drug discovery company Merlion Pharmaceuticals, which has a library of more than 100,000 samples from plants and animals in the region, identified marine organisms from Singapore waters that hold potential for treating cancer and auto-immune diseases, said its business development manager Chris Molloy.

Associate Professor Hugh Tan, an NUS plant expert, said conservation was critical as there is no way to predict whether a particular plant or animal might have medical potential.

'So little is known about many of them that we may not realise what we're losing until it's too late,' he said.

Another passionate exponent of conservation is the director of the Raffles Museum of Biodiversity Research, Associate Professor Peter Ng, who is known internationally for his fieldwork.

Within the scientific community, Prof Ng is not alone in believing that less than 10 per cent of animals living in South-east Asia are known to science.

Even in urbanised Singapore, researchers are still discovering new species of fish, frogs, spiders, snakes and flies in streams in the central catchment area, swamps and forests.

But at the current rate of destruction, many of them will be extinct before science discovers them.

Prof Ng has painted a grave picture of the region's biodiversity, predicting the loss of up to 42 per cent of animal populations in South-east Asia by the end of the century.

While it is impossible to turn back the clock, efforts must be made to save the flora and fauna we have left, he said.

'We can't change history, but we must try to hang on to all the protected areas we have now, as far as possible.'

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