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Chronicling plants

For his work in tropical forestry, Dr Engkik Soepadmo has received the 2012 Merdeka Award.

By NATALIE HENG

DR Engkik Soepadmo has spent over four decades documenting the hidden wonders of our forests. His work on plants has added to the Forest Research Institute of Malaysia's (FRIM) vast collection of 300,000 – and counting – tree specimens.

"Some of the samples we have date from as far back as 1872," says the 75-year-old, opening the door to a room full of storage vaults. Rows of steel shelves greet us. He grabs a wheel-shaped handle and turns it to move an entire row of shelves. Inside are blue boxes, hundreds of them – his life's work.

Soepadmo's contributions to forestry research in Malaysia have been enormous. He has described 56 new species of trees, six of which have been named after him. When he arrived in the country back in 1968, there were perhaps, two Malaysians, who specialised in forestry. Today, there are at least 100, many of whom were his students.

"When I first joined Universiti Malaya, this was one of the country's big gaps. We didn't have enough of our own experts, a collaboration with international scientists was required."

As a lecturer in tropical botany, Soepadmo was in a position to change that scenario – and he did. During his long tenure at the university, he mentored 700 degree students, 75 Masters students and 22 PhD holders. When he joined FRIM in 1993, he continued guiding young botanists there. For his role in promoting the field of forestry, Soepadmo recently received the Merdeka Award for Outstanding Contribution to the People of Malaysia Category.

His journey however, began in Indonesia, where he was born, in an Indonesian village some 40km from Solo in central Java. Since young, Soepadmo had wanted to be a medical doctor. However, growing up in war-time Indonesia was hard. The Japanese occupation, and the ensuing struggle for independence from the Dutch, left Indonesia's school system in tatters, and an entire generation of children missed out on proper schooling for a good few years.

By the time Soepadmo reached high school, things got better but a few years into his secondary education, his father passed away and he had to help his mother earn a living to support two younger brothers. By going for free tuition classes run by kind-hearted volunteers, however, he made the grade for college. But his family still did not have money, or the connections, to secure Soepadmo a place in medical school.

"So when I saw a fully funded scholarship being advertised to join the College of Biology, with a guaranteed job placement at the end of it, I decided to go for it."

Promising future

Soepadmo was one of 30 applicants from all over Indonesia who were accepted for the course. Upon graduation in 1959, he was made junior research assistant at the Bogor Botanical Gardens in Java. A few years later came an offer that would change the course of his destiny – a scholarship for postgraduate studies at the University of Cambridge in Britain under the Colombo Plan (an intergovernmental cooperative venture established in 1951 for the economic and social advancement of the people of South-East Asia). There, studying under renown botanist E.J.H. Corner (author of the groundbreaking book *Wayside Trees of Malaya),* he found his calling in the field of tropical forest botany.

After Cambridge, he worked with another great man in the field, phytogeographer Kees van Steenis, with whom he embarked on a two-year project, documenting the oak and chestnut families of South-East Asia. By the time that was over, the year was 1968. Soepadmo was happily married and a father.

But things were politically unstable in Java, so when an offer came for a lectureship position at Universiti Malaya, he decided to take it.

Recording trees

In 1925, Sir Henry Nicholas Ridley, the first scientific director of the Singapore Botanic Gardens and the man largely credited as being responsible for establishing the rubber industry in the Malay Peninsular, completed the *Flora of the Malay Peninsular*. The five-volume series, published in stages from 1922 to 1925, was the most ambitious and extensive record of Malaysia's vascular plant flora at the time. But it still represented only a fraction of the wealth of the country's biodiversity.

"When you talk about Malaysia, people tend to forget about Sabah and Sarawak," says Soepadmo.

At Universiti Malaya, Soepadmo climbed the ranks from lecturer in tropical botany to become the first professor of ecology in 1978. In 1993 at aged 56, he left the university to

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join FRIM. There, he embarked on a monumental journey, picking up where Ridley left off.

"My first job was to organise, co-ordinate and distribute the tasks to credible botanists from Malaysia and abroad, to commence work on the Tree Flora of Sabah and Sarawak Project."

Almost two decades on, 2,200 species out of an estimated 3,500 have been recorded for the Malaysian states of Borneo. Seven volumes have been published, involving sceintists from world-renowned institutions, such as the Netherland's University of Leiden and Britain's Royal Botanical Gardens at Kew and Royal Botanic Garden Edinburgh.

In 2005, they commenced on updating Ridley's work on Peninsular Malaysia flora. So far, four volumes have been published.

"That's 600 species documented so far, out of a total of over 3,000 species in Ridley's works. It could be another 25 years before we complete the project."

Soepadmo may be aging, but just briefly being in his presence gives one the sense that he's more alive than most. This is a man who will never stop enjoying the process of unearthing nature's splendour. And he's doing a special kind of science, one that is often neglected – fundamental research.

"It's not very sophisticated, it's not very sexy, and it's a lot of hard work … not just in the cushy, air-conditioned herbarium where we process and store specimens, but in the hot and steamy jungle."

Fundamental science has wide applications, he says. "Unless we know the plants, where they lie, and how they maintain their populations in natural habitats, we cannot talk about how to manage these resources. Whether it's aromatic plants, spices or whatever, people can use our publications as a starting point, on what plants to choose, where to find them, and so on. So the knowledge we get from compiling our flora and fauna matters. Unless we know what we have, we won't know what we've lost."

Jungle living

Work in the jungle comes with adventure. One night, their orang asli guide woke them up, saying that a tiger was not far from their camp at Guning Rabung in the Kelantan side of Taman Negara. "We were terrified, of course."

Tigers, as it happens, have an awful, strong scent. Soepadmo reasons that the big cats, after all, do not take baths, sweat a lot, and live off raw meat.

And then there's the tricky task of setting up camp under darkness, in thick jungle. "One night, we woke up to a racket of noise, and found ourselves smack in the middle of an elephant track!" he recalls.

There had been a whole herd of them – dozens of footprints, big and small, were sunk into the mud right in front of their tents.

The longest amount of time Soepadmo has spent in the jungle was two months. He enjoyed those times, living with the orang asli who would fish and cook wonderful fresh meals for his group.

"I learned so many things that schools would never teach you, (such as) how to live off the land, find wild fruits and vegetables." On one occasion, the Senoi orang asli had served him a curry. "It tasted like fish," recalls Soepadmo. "But at some point, it dawned on us (the researchers) that the meat had roundish shapes."

After a good deal of probing, the cook finally relented; Soepadmo had eaten his first jungle snake. On another research trip to Bali, Indonesia, it had been a monkey. "It was certainly food I would not usually eat, but some of it turned out to taste pretty good."

Life in the field is fraught with adventures – like almost getting carried away by fast currents while crossing a river. But such memories are outlived by the knowledge gathered from the trips.

"At first, the orang asli thought it funny, these people coming in and writing down the names and details of every tree. But in the end, we helped them understand the importance of making this knowledge available to the world."

Finding news species is always a nice surprise. The suspense could last years, however, as they cross-reference literature to make sure it hadn't already been documented, in Malaysia or elsewhere.

But when the day finally came, when Soepadmo discovered that what he had found was indeed unique, elation would come.

In describing this feeling, Soepadmo settles for "very, very, very proud".

Though they were defining moments for him, Soepadmo's contributions stretch out beyond the documentation of Malaysia's plant species. He has played a pioneering role in uncovering the reproductive and population dynamics of economically important tropical tree species.

He has also facilitated research and training programmes with local and international research institutions and has contributed to the establishment of protected forest areas, such as Pasoh Forest Reserve in Negeri Sembilan, Lambir National Park in Sarawak, Endau-Rompin State Park in Johor, Royal Belum State Park in Perak, Bukit Tawai Protection Forest Reserve in Sabah, and the Lanjak-Entimau/Bentung Kerihun Transboundary Conservation Area, between Malaysia and Indonesia.

And the sky is still the limit, as far as he is concerned. "Malaysia is one of the world's mega-biodiversity hot spots, and there is so much more to discover. But to do so, you need someone who's willing to slog."

Malaysia can count on Soepadmo to do that. "So long as I can still move, and talk to young generations, I can still continue my research," he says.

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Preserving flora: Dr Engkik Soepadmo's life's work can be found in the herbarium of the Forest Research Institute Malaysia in Kepong, Kuala Lumpur.