

James Franklin Maxwell 1945–2015—an extraordinary botanist

On May 12th 2015, James Franklin Maxwell (“Max”) (Fig. 1), one of Indochina’s most pre-eminent botanists, suffered a fatal heart attack in Rayong Province, Thailand, whilst collecting plants in the field with students. He is survived by his wife of 30 years, Ms. Saijai and two brothers, David and Stan. He leaves behind a legacy of many thousands of plant specimens, deposited in herbaria across Indochina, Europe and America, as well as 86 scientific papers and books. Anyone working on Indochina’s flora will be familiar with Max’s well-preserved and meticulously labelled herbarium specimens and his painstaking floras, checklists and taxonomic revisions.

The middle brother of three, Max was born on March 19th 1945 and grew up 50 miles east of New York City, USA, along the bay. According to his younger brother, David, Max’s fascination with botany began with an 8th grade experiment on bean plants. In his youth, Max was fond of practical jokes, caring for animals, action movies, classical music and bargaining for stamps and coins for his collections; traits with which all who knew Max later in life are very familiar. His compulsion to collect and classify objects was clearly hardwired into his psyche from a young age.

In December, 1968, Max graduated from Ohio State University with a B.Sc. in botany (minor in geology) and looked set to further his botanical studies at graduate school. However, the Vietnamese war intervened and from 1968 to 1969, he ended up serving the US Army as a military policeman; much of the time at the Sattahip military base on Thailand’s southeast coast. There, he developed a keen interest in the natural vegetation that remained protected within base’s security fence. This led to his first botanical publication: “*Vascular Flora of the Sattahip Area*” published later in the Thai Forest Bulletin (MAXWELL, 1974).

Returning home after his military service, Max surprised his family by announcing that he would be moving back to Thailand in early 1970. Thus began his botanical career in Indochina, making fundamental contributions to most of the herbaria across the region. He began at Thailand’s Department of Agriculture in Bangkok, where he curated and expanded the Herbarium collection over 5 years (1970–75), developing an interest in the weeds of agricultural fields, a subject he would cover extensively in subsequent publications (e.g. RADANACHALESS & MAXWELL, 1994).

After a brief spell at the Food and Agriculture Organization’s Regional Office in Bangkok, in 1976, helping to edit the periodical, *Tigerpaper* (to which he subsequently contributed many articles), Max left Thailand in November that year to join the graduate school of the University of Singapore. Two years later, his research on the taxonomy of the genus *Memecylon* L. (Melastomataceae) earned him an M.Sc. His subsequent pursuit of a doctorate, however, was not successful, so Max left the university in 1980 to work at the Herbarium of Singapore’s Botanic Gardens. There, he curated the collection from 1980 until July 1984 and consolidated his specialist expertise on the Melastomataceae, by publishing eight papers on the family (e.g. MAXWELL, 1980a, b).

In August 1984, Max returned to Thailand, accepting the position of Herbarium Curator at the Biology Department of Prince of Songkla University in the south. There, he worked for the renowned phytochemist, Prof. Dr. Pichaet Wiriyachitra, to collect and identify plants with medicinal or piscicidal (fish-killing) properties, but Max did what he always did and collected all the plant species he could find. Consequently, under his curatorship, the PSU

herbarium grew to around 7,000 specimens. Whilst there, he took a particular interest in the vegetation of Ko Hong Hill and eventually described the species that he had collected there in his meticulous and seminal work: “*Vascular Flora of Ko Hong Hill, Songkla Province, Thailand*” — which one reviewer described as an “excellent introduction” to the lowland flora of southern Thailand (MAXWELL, 2006).

In June 1987, Dr. Pichaet moved his research lab to the Pharmacy Faculty of Chiang Mai University (CMU) and Max moved along with him.

The previous year, I had started work as an ecologist in CMU Biology Department and was finding it almost impossible to access the literature needed to identify plants for research projects, so the arrival of an experienced field taxonomist was much anticipated. Back then, there were no plant identification guides (the *Flora of Thailand* was far from complete and difficult to use) and the internet had yet to emerge, so the study of forest ecology in Thailand was severely hampered.

In December 1986, Dr. Ookaew Prakobvitayakit and I had begun work on a transect survey, running up Doi Suthep, traversing all the main forest types on the mountain, as part of an environmental impact study of a proposed cable car development. So, a few days after Max arrived in Chiang Mai, we invited him to join our ongoing field work and to identify the trees we had previously labelled. Over the next months, during weekend field trips, I and my students learnt from Max how to identify many tree species, how to cut good herbarium specimens and how to write useful herbarium labels. Max was more of a mentor than a teacher. He shunned formal teaching and preferred his students to learn by observing him.

The transect survey provided the perfect introduction to the forest types of northern Thailand, for both Max and me, and we published our first joint paper about it (ELLIOTT *ET AL.*, 1989). This experience started Max thinking about the classification of forest types, not only on Doi Suthep (MAXWELL, 1988), but the whole of northern Thailand. He developed his own (somewhat quirky) nomenclature and published several papers on the subject, culminating in his “*Synopsis of the Vegetation of Thailand*” (MAXWELL, 2004).

During his time at the CMU Pharmacy Faculty, Max expanded the Herbarium of the Pharmacy Faculty (CMU Herbarium) to about 10,000 specimens. However, late in 1990, his somewhat volatile temperament was beginning to cause problems with his colleagues there. Later that year, he telephoned me and asked me to set up an interview for him with the head of the CMU Biology Department. At that time, the Biology Department’s herbarium was no more than a few dozen specimens, in a cupboard in the department’s museum. Max was offered the position of curator (to start a proper herbarium), but turned the job down, because it would also involve teaching classes. He survived a further year at the Pharmacy Faculty, before making the same telephone call to me towards the end of 1991. Luckily for Max, my colleague, Dr. Vilaiwan Anusarnsunthorn, was able to use her considerable diplomatic finesse to push through his second application and this time, he accepted the job and started work curating what was to be his 5th and last herbarium, early in 1992, in the museum building of the Biology Department, Science Faculty of Chiang Mai University (CMUB Herbarium). He was employed under a government “anti-brain-drain” scheme, designed to attract and retain mature staff with special skills, by paying higher than regular salaries.

It seemed like Max had finally found stability in his new job and entered probably the most prolific collecting period of his career, working on the floras of several northern mountains and beyond, including Doi Chiang Dao Wildlife Sanctuary (MAXWELL, 1992, 1998); the national parks of Doi Kuhntan (MAXWELL, *ET AL.*, 1995), Jae Sawn (MAXWELL *ET AL.*, 1997)



Figure 1. Max's memorial portrait depicts him pressing plant specimens in the field. It hangs at the top of the stairs in the CMUB Herbarium Building, Department of Biology, Faculty of Science, Chiang Mai University.

and Doi Luang (MAXWELL, 2000a) and the districts of Sangklaburi (Kanchanaburi Province) (MAXWELL, 1995) and Chom Tong (Chiang Mai Province) (MAXWELL, 1996). Max was assisted with much of this work by Pranee Palee (now Dr. Pranee Nangngam), who processed most of the specimens and has now become a notable botanist herself; one of Max's protégés. With the rapid accumulation of specimens from this explosion of field work, the collection soon outgrew the space allocated for it in the museum, so Dr. Vilaiwan asked CMU to construct a new 3-storey, purpose-built herbarium. Thanks largely to her perseverance, the plan was approved and the new CMUB Herbarium building opened in 1996. The entire open-plan, top floor was given over to Max's collections in rows upon rows of cabinets, alongside his library, work benches and office. Max's strategy for deterring anyone who might encroach upon such a vast work space, in such a severely overcrowded department, was to chase away the cleaners and allow a thick layer of dust to settle on everything. He once rebuked one of my staff who he "caught" cleaning—"if you clean it, someone will steal it!"

Shortly after the new herbarium building opened, Max started to work on what would become the first practical tree identification handbook in Thailand. However, he soon developed conflicts with his co-authors, particularly over the inclusion of colour photographs in the

work, and consequently withdrew himself from authorship, even though the tree descriptions in the book are based largely on his specimens. Luckily, the other authors persevered and “*A Field Guide to the Forest Trees of Northern Thailand*” went to press in 2000 (GARDNER *ET AL.*, 2000). It remains, to this day, one of the most useful projects Max contributed to, finally bringing to field workers and nature enthusiasts the ability to identify tree species in Thailand, without having to visit the herbarium ... and that might very well have been the reason why Max vehemently denigrated the book thereafter to anyone who would listen.



Figure 2. Max, showing tree seedling specimens to Jonas Mueller from Royal Botanic Gardens Kew, a few days before setting out on his final field trip.

Max was able to work a little more harmoniously on development of the Forest Restoration Research Unit (FORRU-CMU), which Dr. Vilaiwan and I co-founded in 1994. The aim of the unit, which fell under the umbrella of the herbarium, was to apply novel techniques to restore northern Thailand's forest ecosystems to deforested sites. Max's expertise was vital to this endeavor. We could not possibly have achieved so much without an in-house botanist of his calibre. Max worked for us, in the field, time and time again, to identify seed trees, carry out pre-restoration surveys and post-restoration monitoring, not only of trees, but also the ground flora. He collected and preserved voucher specimens of adult trees, as well as some of the first specimens of tree seedlings to appear in any of Thailand's herbaria. Max's fundamental contributions to forest restoration science in northern Thailand were reflected by his acceptance of co-authorship of two of the unit's early books: "*Tree Seeds and Seedlings for Restoring Forests in Northern Thailand*" (KERBY *ET AL.*, 2000) and "*How to Plant a Forest*" (ELLIOTT *ET AL.*, 2006), as well as several papers, describing the tree species of most value for forest restoration, including one of Max's new records for Thailand, *Hovenia dulcis* (KOPACHON *ET AL.*, 1996).

Max's growing knowledge of Doi Suthep-Pui National Park, adjacent to CMU campus, provided him with a unique opportunity to compile one of the most complete floras of any area in northern Thailand. As computers became more common, Max was persuaded to start using standard data formats about the species he was collecting, so that data could be entered into a computer database. At first resistant to such a "modern" approach, Max gradually warmed to the idea once he realized he could sort his data and extract lists of plants, meeting different criteria, in ways that were impossible using his traditional shoe boxes stuffed full of index papers. He would not actually use a computer himself at that time, but would fill in the forms with his typewriter and then hand them to our secretary for keying the data into the system. The database enabled him to compile a flora of Doi Suthep with levels of detail and thoroughness that went well beyond those of his previous floras. Max was keen to publish the work and the Biodiversity Research and Training Program put up the funds to print it as a book. The "*Vegetation and Vascular Flora of Doi Sutep-Pui National Park, Northern Thailand*" went to press in 2001 (MAXWELL & ELLIOTT, 2001). Covering 2,227 species, it remains to this day the best possible entry point for those starting studies of northern Thailand's vegetation, in much the same way as his account of the flora of Ko Hong Hill would do for the lowland vegetation of southern Thailand, when it came out in 2006, except that that volume would cover "only" 637 species (MAXWELL, 2006).

Shortly thereafter, the government "anti-brain-drain" scheme, which had provided Max's salary, expired. With the retirement of Dr. Vilaiwan, there was no one in authority to fight for an alternative salaried position for Max, and he could not be persuaded to apply to grant-awarding bodies to fund his own work (as any other academic would have done). But it did not seem to matter. Max's expertise was by now well-known and much in demand, so he became a roving consultant to the many environmental organizations, throughout the region, that required botanical advice for their projects. He enjoyed his independence from obligations to the university, whilst remaining firmly entrenched in the CMUB Herbarium as curator and rebuffing attempts to provide him with assistants to train (after Pranee Palee left to pursue her Ph.D.). Working on short (but lucrative) contracts for international organizations, such as World Bank, IUCN, FAO and WWF, among many others, enabled him to build up a pension fund that would not have been possible had he remained on a university salary. He worked on the likely impact of the controversial Kaeng Sua Ten Dam on the vegetation of

one of last teak forests in Thailand, recorded the flora of the Seephandon wetlands in Lao PDR (to help develop a management program for fish and endangered dolphins) (MAXWELL, 2000b), assessed the impact of a gas pipeline on vegetation in Myanmar (MAXWELL, 2001) and inventoried the flora along the Mekong in Cambodia, employed by WWF, logging 683 plant species, including a new species of *Amorphophallus* (MAXWELL, 2009a). He also compiled an impressive database of 1,013 vascular plant species at Doi Tung in Chiang Rai Province (MAXWELL, 2008).

Max also continued to work closely with his long-term friend and colleague Dr. Warren Brockelman, an ecologist at Mahidol University with a long-term interest in gibbons. Starting around 1998, Warren had established a large long-term ecological monitoring plot (the Mo Singto Plot) around the territory of a gibbon study group in Khao Yai National Park and employed Max to name the plant species therein – a mammoth task, now completed and going to press (BROCKELMAN *ET AL.*, 2017). The nearly-500-page tome will include descriptions of 260 tree and shrub species, as well as checklists of herbs and lianas. The specimens from this study form the basis for yet another herbarium at BIOTEC, in Bangkok (BBH).

FORRU-CMU also continued to employ him on several projects with various funding agencies. He helped us to establish a satellite unit in Krabi (Southern Thailand) (sponsored by Britain's Darwin Initiative), during which he wrote a detailed account of one of the last lowland rainforests in southern Thailand (MAXWELL, 2009b). During the establishment of FORRU-Cambodia, in Siem Reap (Cambodia), Max helped us to locate and identify seed trees and test of the transferability of FORRU-CMU's methodology to another country (also funded by the Darwin Initiative). He was also employed on two projects at Doi Mae Salong (Chiang Rai Province), one to monitor the potential for "accelerated natural regeneration" to restore forests without tree planting (sponsored by FAO) and another testing hypothesized relationships between biodiversity and carbon accumulation in forests at different stages of recovery (sponsored by ICRAF). Later, he also worked for us on a project to restore forest to two open cast mines in Lampang Province (funded by Siam Cement Group), once again helping to locate and identify the vital seed trees, upon which all forest restoration projects depend.

The last time I met with Max was when he showed visitors from Kew Botanical Gardens around the herbarium (Fig. 2), preparing for a major tree seed-banking project. The funders liked what they saw and the project is now on-going, but sadly without Max's careful checking of the tree identifications.

Over 45 years of botanical research, Max described more than 180 new plant taxa and discovered many new records for Thailand and neighbouring countries. He also played pivotal roles in establishing herbaria in Bangkok, Singapore and Songkla and single handedly revived two fading collections at CMU. At the time of his death, CMUB had grown to become the third largest herbarium in Thailand, containing upwards of 40,000 specimens. He also contributed the bulk of specimens that kick-started the establishment of herbaria at the National University of Lao PDR and the Royal University of Phnom Penh and very large numbers of his duplicates were contributed to herbaria in Europe and America, particularly Leiden. Whilst it is impossible to say how many plant specimens Max contributed to the world's herbaria, the number probably exceeds 100,000. This work provides botanists with a vital snap shot of Indochina's flora, against which the effects of habitat loss and global climate change will be measured for centuries to come.

On a personal note, there is no doubt that Max enhanced my knowledge and enabled me to work on the forest ecology of northern Thailand in ways that would have been impossible without him. Almost without realizing it, I learnt from him the names of nearly all the plant species that my memory can currently hold, as well as good habits and techniques of botanical work. On the other hand, his abrasive and volatile temperament, and unrelenting slander of all those around him, were very hard to endure and caused much stress. On the whole, though, Max is sorely missed. I end with an extract from a poem I wrote for his memorial book, which I think reflects his spirit.

*“So, I will miss his banter—the seamless mixture of brilliance and nonsense,
astute observations and continual complaining, as he rummaged through the waste
paper basket in my office, every time I forgot to close the door,
And I will miss seeing him ride his boneshaker bicycle through CMU campus,
every morning and every evening like clockwork,
And I will miss the sound of opera blasting from the ever-open windows of
the third floor, accompanied by the clatter of his typewriter.
The forest has lost a champion and will seem a little emptier without him.
Hundreds of his former students have lost their mentor,
but they will further his legacy,
And I have lost a friend, as well as the most interesting and yet annoying
colleague I have ever had the privilege of working with.
He was indeed a character of contrasts.”*

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