

Lim Lee Hong, Susan (1952–2014) — monogenean systematist and Commissioner 2006–2014

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Professor Lim Lee Hong, Susan, better known to her international colleagues and friends as Susan Lim, or just ‘Susan’, died on 2nd August 2014 in Petaling Jaya, Selangor, Malaysia, after losing a long fight with cancer. She was a very active parasitologist, a full professor in the Institute of Biological Sciences at the University of Malaya in Kuala Lumpur since 2003 and a Member of the International Commission on Zoological Nomenclature since 2006.

Susan was the leading specialist in Malaysia and Southeast Asia on a group of parasitic flatworms called the Monogenea. Most monogeneans are ectoparasites of fishes; they are a relatively large group with about 5,000 described species. Some monogeneans are of significant economic importance because, when they occur in huge numbers, they can have a serious pathogenic impact on fishes, especially food fishes cultured in farms. In a career spanning some 35 years, Susan established herself as one of the top scholars in her field.

Born on St Valentine's Day in 1952 at Seremban in the State of Negeri Sembilan, Susan was the second of three daughters of the owner of an oil palm and rubber business. Educated by nuns in a Roman Catholic school, by the age of six she could neither speak nor understand a word of English and failed all subjects except arithmetic. Eventually, having moved to an all-boys school (causing quite a stir in those days) for her Advanced Level studies, she nevertheless acquitted herself exceedingly well. In 1971, she obtained a deserved place at the University of Malaya in Kuala Lumpur to study zoology, eventually graduating with an honours degree. In those days it was still quite difficult for an ethnic Chinese (and a woman at that!) to obtain training abroad, so Susan remained at the University of Malaya for her MSc and PhD, funding her studies as a careers tutor (1976–89). In 1978, she was awarded a UNESCO scholarship to work on monogeneans for three months with Dr Kálmán Molnár in Budapest, Hungary, and in 1982, she obtained a fellowship from the USSR Academy of Sciences to spend three months in St Petersburg, Russia, working with Prof. Oleg Bauer and Dr Alec Gusev; the latter was, at that time, the leading world expert on monogeneans. Trained and inspired to study these parasites, she started her PhD (*Distribution and Diversity of Monogeneans in Freshwater Fishes of Peninsular Malaysia*) in 1980 under the supervision of Prof. Jose I. Furtado in the then Department of Zoology. During this period, she also embarked on a new venture – she married her colleague George Liew and was later blessed with a daughter and a son.

Through the 1980s, Susan published actively, describing many monogeneans and establishing herself as a key player in the field. In 1987, she completed her PhD, remaining on the university staff as a zoology tutor. However, her academic prowess was such that she was promoted to a lecturer in 1989, after which she never looked back, becoming a full professor by 2003. Although Susan continued her work on freshwater monogeneans, she gradually transferred her attention to the marine fauna. Publishing regularly in good international journals, she became well known internationally from her papers and from her active attendance at and participation in international meetings. These tended to be specialist meetings, such as the *International Symposium on Ichthyoparasitology* and the *International Symposium on Monogenea*, to which she always contributed presentations of her work.

Initially, as Susan was working in a region where the fauna was little known, her research was mostly at the alpha-taxonomic level. She described more than 100 new species, several new genera and a new family. Taking into account these and her specific re-assignments (together more than 200 taxa), she became the sixth most prolific monogenean worker ever (and the foremost female worker). As her expertise developed, she undertook major generic revisions with a wider geographical relevance to workers throughout Asia and around the Indian and Pacific Oceans. These included papers on *Hamatopeduncularia*, *Thaparocleidus*, *Calydiscooides* (one species of which has subsequently been named *C. limae*), *Triacanthinella*, *Neohaliotrema* and *Neocalceostoma*. These were followed by even more general revisionary works and reviews, such as 'Sundaic monogeneans and Gondwana', 'Dactylogyridean monogeneans of the siluriform fishes of the Old World' and 'Diversity of monogeneans in Southeast Asia'. In 2002, she co-edited and contributed to an important book titled '*Diseases and Disorders of Finfish in Cage Culture*'. She also contributed to teaching units on animal diversity for the Open University in Malaysia. Susan was an excellent

artist and quickly converted to making digital drawings, publishing some of the first such illustrations of her group in colour. However, her interests were not all related to classical morphology. Even in her early studies during the 1980s she published a paper on the use of Jaccard's Index of Similarity for distinguishing congeneric monogeneans. Later, she developed an interest in functional morphology and described an entirely new mechanism of attachment in the form of net-like structures formed by the coagulation of secretions emanating from the posterior attachment organ of some of her monogeneans. As reflected in the work of her students, in recent years she also embraced a very wide range of topics and disciplines, including ultrastructural and molecular studies, 3D imaging, biotechnology, information technology and biodiversity database management. She was also heavily involved in the development of a database of the metazoan parasites of Malaysian wild animals.

In addition to her university teaching duties, Susan supervised many postgraduate students. Arpah Bt Abu, Tan Wooi Boon, Wong Wey Lim, Neeta Devi Sinnapah and Theerawoot Lerssutthichawal all completed their PhDs under her guidance; she was still supervising another five PhD students at the time of her death. In addition, 11 MSc students benefitted from her supervision. Susan arranged for some of these students to undertake part of their studies abroad at Queens University, Belfast, UK, and the University of Perpignan, France. Regular checks on her students meant that she was a regular visitor to the Natural History Museum, London, to discuss joint projects and examine material.

Susan had a great interest on passing on her expertise and in the training of taxonomists for filling present and future roles in biodiversity and wildlife management. She presented several talks on this topic at international meetings, emphasizing the lack of available training and job-opportunities in taxonomy. In relation to this, and mainly for younger people, in 2004 she organised a '*Workshop on Parasitic Invertebrate Collections & Relational Database Management*' and a '*Forum on Biodiversity Inventories & Data-sharing – A Framework for Malaysia*' with a significant international specialist involvement, and in 2006 she persuaded the editor of an international parasitological journal to run a course on '*Publishing in International Journals*'. In view of her interest in systematics, she became responsible for the type-collection of the Zoological Museum at the University of Malaya and fought for a national collection of natural history specimens. Since 1979 she had been a member of the Malaysian Society of Parasitology & Tropical Medicine, was its Honorary Secretary twice and was awarded a life membership in 2009. These were in addition to serving on various university and national committees. Her productivity, the quality of her work and sociable nature lead to increased international recognition. This resulted in more travel opportunities and co-operative studies, with research visits to Japan, India, Australia, Canada, New Caledonia, South Africa and various European countries, the longest being a year spent at the University of Guelph, Canada, in 1995. In 2006, Susan was elected into the International Commission on Zoological Nomenclature; an international group of taxonomists tasked to manage and regulate how zoological names are used. As one of only three women in the ICZN at the time (and the only Malaysian ever elected to this prestigious body), she brought her expertise on parasites to the international stage. Ever the advocate for systematics, she defended the science of taxonomy tooth and nail, and was a perfect candidate for the job!

Susan was always positive, energetic and, as in the case of many women who have made it to the top in a male-dominated world, had considerable strength of character, defending her work (and the study of her animals) aggressively. More than one reviewer has taken on the job of refereeing a Lim paper with some degree of trepidation – her rebuttals sometimes had to be ‘moderated’ by co-authors! She singularly disliked self-righteous and condescending characters; her scowl (and growl) for such people was well known. She despised what she saw as unfairness and cronyism, and was a firm believer in meritocracy; and few could ‘out-work’ her. This advocacy often got her in trouble with senior management, but this never stopped her. Courage characterised her many fights for fair treatment for staff and students; and she rarely gave in. One of us (PKLN) had on more than one occasion to calm her down when she worked herself up over what she saw as wrongdoings; and got growled at in the process for being too naïve or diplomatic! Susan always had this ‘fire in her belly’ – one of her remarks to DIG many years ago was proof that this started young – in primary school as a prefect, she commented that “I preferred to play than to guard and got a ticking off from my headmistress who told me that that was not how a prefect should behave – I never like authority nor understand it”. That was Susan and until her last day – a fighter! This same ‘spunk’ made her a friend one could count on through thick and thin. Her ‘defence’ of her animals and her science, and her intolerance of prima donnas belied her more usual convivial nature. The fact is, Susan was a genuinely nice person, with a good heart and jovial (and often cheeky) disposition – always popular with international colleagues, always with a greeting smile. She was never a person overly worried about her appearance – her sartorial elegance usually extended to a t-shirt and pair of jeans; however, on occasions when she got fully ‘togged out’, and Lim’s limbs made a rare appearance, she could look rather stunning.

PKLN last saw her when the ICZN convened in Singapore in November 2013 to discuss the fate and future of this organisation, as it faced a series of huge financial and scientific challenges. Susan attended the proceedings and contributed in her usual way – energetically and positively. As is typical of Susan – she dragged George down to Singapore with her and, while she was engaged in ICZN matters during the day, he was out in the field collecting parasites from marine fishes with an assistant! And in the evening, she would look at parasites with them. Talk about work ethos and a love for monogeneans! Encouraged by her active participation, and that she had apparently overcome her fight with cancer, the ICZN was hoping she would be a force for change. Sadly, the illness returned and, this time, she lost the fight. Her old friend and mentor, Dr. A. Sasekumar, told PKLN that she was true to form right to the very end, talking about science with her usual passion the day before she passed on. Vintage Susan!

Susan’s passing, at the young age of 62, is a great loss – not only in terms of expertise to her country but to science as a whole. Susan was a good friend to many and will long be remembered by monogenean specialists throughout the world for her contributions. Immortal in the form of the many new taxa she described, her influence will also live on in the form of her students, her published work and in the memories of her family, friends and colleagues.