



## PREFACE

## IN HONOUR OF PROFESSOR G. H. NEIL TOWERS 75TH BIRTHDAY

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PROFESSOR G. H. NEIL TOWERS

When one conjures up the name of Professor G. H. Neil Towers, a series of images come to mind of an enthusiastic and compassionate scientist, devoted to and fascinated with the splendor of plant life and the phytochemicals therein. Indeed, Neil belongs to that very rare group of true authorities on the remarkable phytochemical bounty that Nature has provided us with. In his lifelong quest, Professor Towers has focused primarily on identifying what important pharmacological and ecological roles these compounds can fulfill. Yet when one thinks of Neil, visions other than that of an ethno-botanist or phytochemist also spring to mind: he is a scientist, never too busy to help mentor young scientists embarking upon their careers, or in inspiring others to join the field, or to provide words of encouragement to both young and old alike.

Neil was born on September 28, 1923, in Bombay, India, to English parents, but subsequently spent most

of his formative years in Burma and then England. Like so many of his generation, he joined the armed forces (Royal Navy) during the second world war, where he rose to the rank of Naval Lieutenant. When hostilities ceased, Neil was able to return to his love of plants, and with the financial assistance of Ajax scholarships, obtained both B.Sc. and M.Sc. degrees in Botany at McGill University in 1950 and 1951, respectively. Eager to learn more, Neil next set off to Cornell University where, under the tutelage of Prof. F. C. Steward, he completed his Ph.D. (plant physiology/phytochemistry) in 1954.

Neil's highly successful academic career has taken him principally to three institutions, namely McGill University (Assistant/Associate Professor, 1953–1962), the National Research Council (Senior Research Officer, 1962–1964) and the University of British Columbia (Full Professor, Botany Department, 1964–1988). Since then, he has held the rank of Emeritus Professor and has sustained a path that would be the envy of most (younger) University Faculty anywhere.

His research interests could never be limited to any

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single scientific problem or theme and this only becomes fully apparent upon examining the scope of his 400 refereed publications, invited symposia, book chapters and reviews. A few examples illustrate the seminal nature of his studies: he discovered that the dihydrochalcone, phloridzin, was biosynthesized from acetate and phenylalanine/cinnamate, which, in turn, ushered in the biochemistry of the flavonoids and the discovery of chalcone synthase some ten years later by other investigators.

He was the first to show that fungi possessed phenylalanine and tyrosine ammonia lyases, which were involved in the formation of phenolic acids in, for example, wood-decaying basidiomycetes. He made numerous contributions to the biosynthesis of important plant phenolics, e.g., cell-wall bound hydroxycinnamic acids, as well as hydrangenol, rosmarinic acid and psilotin. His early studies also established the chemotaxonomic significance of the syringyl unit of plant lignins.

Neil's principal fascination, however, lies with the enormous diversity of plant phytochemicals, an enduring interest which brought him to medicinal phytochemistry and ethnopharmacology. A few examples will again suffice. His work has resulted in the identification of various compounds specifically responsible for contact allergies (inspired by collaborative studies with J. C. Mitchell) and photosensitizers (e.g., thiophenes), as well as a large variety of phytochemicals having antifungal, antimicrobial, and antitumor properties. His studies have also led to the discovery of many naturally occurring pesticides and herbicides.

These scientific papers do not, however, readily reveal that Neil is an avid collector of plants (primarily medicinal), and scoured the globe well before others followed in the craft of ethnobotany. His travels have taken him to nearly every country in South America (Chile, Ecuador, Venezuela, Argentina, Brazil, Peru, Columbia, Mexico), to the Far East (Nepal, India, China, Indonesia, Thailand, Japan), to the African continent, as well as to the forests of British Columbia and to many other regions of North America. Indeed, Neil was part of the famous Amazonian expedition, in 1977, led by Richard E. Schultes, aboard the Alpha Helix.

Such expeditions were never dull and Neil always returns with interesting and captivating stories, such as when he was tumbled out of bed in Ecuador by an earthquake, and where the only lighting in his room came from fluorescent beetles collected earlier in the day. On another trip, he found himself swimming alongside piranha fish and was also badly shaken

when he stumbled into a lion in the bush in Africa. He also had the opportunity to study the habits of various native populations and, in the Andes, documented natives preparing cocaine from coca leaves, and in the Golden Triangle, recorded opium smoking. Nor were such trips without any risk. He returned from India with dysentery, from South America with at least five types of intestinal parasites and was sent home on a stretcher from Thailand with cellulolysis, which resulted in him spending several days in Vancouver General Hospital under massive antibiotic treatment.

Neil has received many accolades for his work. He was elected Fellow of the Royal Society of Canada in 1967, then became the second recipient of the Gold Medal from the Canadian Society of Plant Physiologists (1973), as well as being selected as a Killam Fellow (Canada, 1970) and an Erskine Fellow (New Zealand, 1989). He has also served the profession well—he was President of the Canadian Society of Plant Physiologists (1965) and then President of the Phytochemical Society of North America in 1974 and 1986. Neil also often volunteers to promote science among students of high schools and native community colleges and does so with a highly entertaining and informative presentation that includes colorful slide projections from the many countries he has visited.

Yet, even with his hectic schedule of travel, research and writing, Neil rarely misses his daily tennis match, or the glass(es) of wine required daily to confer health protection and longevity.

Beneath his quite demeanor, he is a very competitive scientist and an eternal optimist. In the nineteen-eighties, when Neil and myself (Norman Lewis) were completing a grant proposal, I told him that I was forwarding the final version by courier and would have to have any corrections back the next day. After some hesitating and deliberate obfuscating, he told me that it might not be possible and would the next morning do? Some pointed questions followed as to why such a delay was necessary, to which Neil eventually revealed that he was undergoing a triple (actually pentuple) heart bypass operation the next day, but would read the proposal as soon as the anaesthetic wore off!

It is indeed a great pleasure, both for ourselves and the many contributors and well-wishers, to honor Neil Towers on his 75th birthday for his valuable contributions to the fields of phytochemistry.

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