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This occasional section within the journal surveys visions and achievements, often not on the main track of the developing biomedical sciences, but all relating to discoveries and developments of medicinal – both ancient and modern. What they have in common, in one way or another, is providing further background and glances around the edges of the core discipline of pharmacognosy, as it has been and continues to evolve within our times.

# The Venom of One of the World's Most Deadly Spiders may Provide a Novel Drug to Treat Heart Attack and Stroke Patients and Save Lives

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Approximately 500 years ago, the Swiss philosopher Paracelsus noted that the dose was the important factor in toxicity and that medicines were in fact toxins used at therapeutic doses. Based on that principle, there is a branch of medical research that examines venoms for therapeutic properties to identify potential drug targets. Professor Glenn King from the Institute for Molecular Biosciences at the University of Queensland, Australia leads a group that screens venoms from spiders, scorpions and centipedes, focusing on treatments for pain, epilepsy and stroke. Interestingly, that group recently identified a compound in the venom of a funnel-web spider that is native to K'gari Island, Australia (formerly known as Fraser Island) that blocks cellular mechanisms that induce death of brain and heart cells.1,2 It is believed that by blocking these events, the toxic compound may be useful in decreasing/preventing death associated with heart attack and stroke. The group is currently evaluating the toxicity parameters of the compound, which is necessary to establish to undertake clinical trials through the Therapeutic Goods Administration (TGA) and US Federal Drug Administration (FDA). The group is nearing the end of this process and hopes to begin clinical trials to treat patients suffering from serious heart attack in 2025. Furthermore, it is hoped that the drug will be made available clinically within five years.

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# Drinking Dwarf Labrador tea (*Rhododendron subarcticum* Harmaja) Helps Prevent Malaria

The leaves of several species of the genus Rhododendron are used traditionally by the Inuit indigenous people of Canada and the United States of America as herbal teas to treat nasal congestion, colds and influenza, stomach aches and gastrointestinal disorders, as well as headaches. Yet despite its traditional uses, this genus is relatively under studied for its antimicrobial properties and phytochemistry. A recent study published in ACS Omega reported that dwarf Labrador tea (*Rhododendron subarcticum* Harmaja) reported that essential oils produced from *R. subarcticum* leaves collected in northern Quebec inhibited the lifecycle of two strains of *Plasmodium falciparum* (a parasite the causes malaria in humans), including a strain that is resistant to other anti-malarial therapies.[1] The authors reported that the essential oils had significant inhibitory activity against both malaria strains. The authors also analysed the essential oils by GC-MS and determined that ascaridole (~65%) and cymene (~21%) were the major constituents of the 53 compounds identified. Of these, ascaridole was reported to be the component primarily responsible for the anti-malarial activity of the oil.

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# Ginger Consumption Reduces the Symptoms of Multiple Sclerosis in a Small-Scale Clinical Trial

*Zingiber officinale* Roscoe (commonly called ginger is a flowering plant whose rhizome (ginger) is commonly used as a spice. It also has numerous traditional uses, including for its anti-inflammatory properties, which have been linked to its gingerol, shogaol, zingerone, quercetin and α-curcumene constitutents.[1] On the basis of these uses and phytochemistry, several studies have inferred that ginger may be useful to reduce the symptoms of multiple sclerosis, as well as other neurodegenerative diseases.[2,3] Furthermore, the compound gingerol-6 has been shown to inhibit the migration of inflammatory associated cells to neuronal tissue, as well as reducing neuro-inflammation and demyelination in a mouse model.[4] Additionally, that study showed that gingerol reduced lipopolysaccharide activation of dendritic cells, and inhibited NF-KB activation. On the basis of these earlier studies a small-scale (52 participants: 26 each in the test and placebo groups) clinical trial was undertaken and reported that 12 weeks treatment with ginger significantly improved several multiple sclerosis associated morbidities without affecting the body mass index.[5]

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