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Leading a war against deadly diseases

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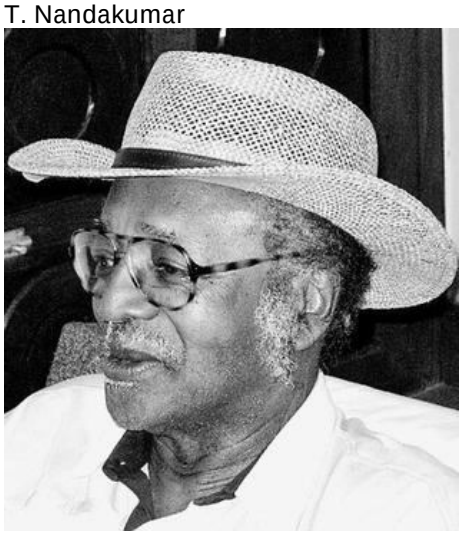

Bertram Fraser-Reid

It is easy to mistake him for a backpacker — the straw hat, T-shirt, sneakers, and the bag strapped to his waist declare him to be a tourist. He enjoys travelling but Bertram Fraser-Reid is after more serious things.

Being in the frontline of the global search to find cures for deadly diseases does not allow him the luxury of extended holidays or indulging in his favourite pastime — playing the piano.

It is no accident that prompted Dr. Fraser-Reid to opt for a career in researching sugar chemistry and finding a cure for tropical diseases such as malaria and tuberculosis. He recalls how his father and he, along with his brothers and sisters, were diabetics. Born in Jamaica, he fell victim to malaria at the age of 13.

Talking to *The Hindu* on his arrival here to attend a workshop on Open Source Drug Discovery (OSDD) organised by the National Institute for Interdisciplinary Science and Technology (NIIST), he recalls: “At that time, the malaria did not bother me. As a matter of fact, it kept me from going to school. I was intermittently well and feverish. In the middle of the day, I would feel better and so go to play football. Everybody was saying I was a fraud because as soon as the sun goes down, I would feel sick and start shaking with fever.”

Today, at 78, Dr. Fraser-Reid heads a no-profit institution dedicated to finding a cure for diseases that claim millions of lives every year. He is the first scientist to have synthesised the suspected toxin that causes cerebral malaria, a breakthrough that has the potential for the development of a vaccine against the dreaded disease.

Way back in 1966, at the University of Waterloo in Ontario, he developed a process to make synthetic pheromones, the chemical attractants produced naturally by insects, paving the way for the development of a biological means of pest control. Another project involved the role of oligosaccharides, a complex sugar, in immune responses and the role these molecules play in human diseases like malaria and AIDS.

It was in 1996, he and his wife established the Natural Products and Glycotechnology (NPG) Research Institute at North Carolina State University in the U.S. “Getting support for working on sugar chemistry was always difficult,” he says. “Our applications for funding were turned down time and again. But today, the potential of carbohydrate chemistry is recognised,” he says.

He, however, feels that the profit-driven pharmaceutical industry has failed to support research. “This whole business of health care for profit has to go. You cannot have the nation ravaged by malaria and TB and get stuck because you do not know who is going to pay for the vaccine and at the same time, you have enough money to build roads.” In India, he says, you do not have to beg pharmaceutical companies because the Council of Scientific and Industrial Research (CSIR) is supporting drug development with OSDD, a global initiative to provide affordable health care.

"If we had that available to us, we would not have had to go through all that run around," he says. "In the U.S., 39,000 medicinal chemists have been laid off. Students in their late 40s and 50s are out of work because companies shed jobs as they grew in size." Asked about the prospects of developing drugs based on natural products for resistant strains, he says, "Sometimes these things take a long time. The bacterium does not want to die. It is always gong to try to outwit you and stay one step ahead."

An accomplished keyboard musician, Dr. Fraser-Reid has performed at public concerts. He also has a collection of hats from around the world.