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Quest for a Malaysian Nobel laureate

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AT a recent function hosted by the Malaysian Academy of Science, Prime Minister Datuk Seri Dr Mahathir Mohamad issued a challenge to the local scientific fraternity to produce a Nobel Laureate by the year 2020.

In a way, the challenge is most appropriate, considering the current buoyancy in the country's scientific community. Scientific findings and innovations can become worthy commodities for export to reverse the flow of intellectual property royalty Malaysia has been coughing out.

Such payment has always been a major draining factor which contributes to the persistently huge negative balance in the nation's trade account. And especially so in this moment of economic turmoil, the reduction in the outflow of funds would certainly be a godsend.

While acknowledging that local scientists have made significant breakthroughs in various areas of research, the Prime Minister urged them to push harder towards greater heights, in response to the Government's unwavering support in terms of policies, building infrastructure and allocating financial resources for science and technology-related activities.

The Intensified Research in Priority Areas grant of the Ministry of Science, Technology and Environment is a prime example of the commitment to propel the country into a society of curious minds and zealous hearts.

"We have to strive for excellence and in the process, transform Malaysia into one of the world players in science and technology," the Prime Minister had said.

The Nobel Prize is a legacy of Alfred Nobel, the Swedish industrialist who invented dynamite. When he died of heart disease in 1896, he left a will stipulating that winners of the prizes should be benefactors of mankind.

Nobel selected chemistry, physics, physiology or medicine, literature and peace for the prizes. Four institutions agreed to award the prizes. Recipients for literature and peace prizes are selected by the Swedish Academy and the Norwegian Nobel Institute respectively.

The Royal Swedish Academy of Sciences selects awardees for the physics and chemistry prizes, while the Karolinska Institute chooses winners in physiology or medicine.

In his will, Nobel designated that the peace prize be presented in Oslo and the others in Stockholm. During his lifetime, Norway and Sweden were still united, thus his reasons for including the two parts of his homeland as settings for the prize-giving ceremonies.

Thus, beginning 1901, the Nobel prizes have been presented on Dec 10, to coincide with the anniversary of his death. Since 1969, an additional prize, in memory of Nobel, has been awarded in Stockholm, the Bank of Sweden Prize in Economic Sciences.

The selection process of the Nobel Prize winners is shrouded in secrecy. Six special committees, each comprising five members, start their search from Feb 1, each year. Outside experts may be called in for additional advice.

In early autumn, they submit recommendations to the respective prize-awarding bodies, which have the sole right to decide. Even a unanimous committee recommendation can be overruled. It is said that no records are kept of the deliberations. The decisions are final, with no room for appeal.

The names of this year's winners were announced recently. John Hume and David Trimble were the recipients of the peace prize. They were credited for their efforts in finding a peaceful solution to the conflict in Northern Ireland.

Amartya Kumar Sen became the sixth Indian Laureate when he received the Nobel Prize for Economics. He is a welfare economist who provides an ethical dimension to the study of economics.

His selection is a glaring departure from the darlings of the free market from the Chicago School of Economics, who have monopolised this category in recent decades.

As an economist, Sen does not swallow the globalisation pill wholly. He adopts the middle path, saying that although globalisation can be a major force for the good of the world, it can also backfire.

He says it should happen in a gradual manner as a headlong plunge can exacerbate the problem of social and economic inequality. And how true this has turned out to be!

Three physicists share the 1998 Nobel Prize for physics. They are American Robert B. Laughlin; German Horst L. Stormer; and, China-born Daniel C. Tsui.

The three initiated and described the phenomenon whereby electrons in a powerful magnetic field can condense to form a fluid. This so-called quantum fluid provides an indispensable avenue to study the general inner structure and dynamics of matter.

Commercially, the discovery is significant for the miniaturisation of electronic products. The barrier that limits the smallness of computers, televisions and mobile phones has probably been broken down.

Austrian Walter Kohn and Briton John A. Popple shared the chemistry prize. They both contributed to developing methods that can be used for theoretical studies of molecules and the chemical processes in which they are involved.

The citation of the Royal Swedish Academy of Science reads: "To Kohn for his development of the density-functional theory and Popple for his development of computational methods in quantum chemistry".

For Literature, Joese Saramago was the sole recipient. He is the first writer from Portugal to receive the world's most coveted literary award. The 75-year-old Saramago is a well-known author, poet and political commentator. Naturally, he is a non-conformist and self-confessed sceptic.

Perhaps the most notable Nobel Prize winners for 1998 are the three gentlemen scientists who have provided not only relief but also euphoria to their male counterparts.

The American trio of Robert F. Furchgott, Louis J. Ignarro and Ferid Murad bagged the prize for medicine or physiology. Their studies were all centred on a simple gas better known as a pollutant, nitric oxide.

Murad discovered in 1977 that nitroglycerine and other related compounds, then widely used in the prevention of heart pain, act by releasing nitric oxide.

Furchgott later found that a substance released from the lining of the blood vessels can help increase blood circulation to the heart by dilating the vessels. The substance was termed endothelium derived relaxing factor or EDRF.

Ignarro then tied up Murad's and Furchgott's findings in proving that EDRF is nitric oxide. Although doctors have prescribed nitroglycerine for more than 100 years, nobody had a clue as to how it works.

Nobel, too, was offered this drug by his doctor, which he refused. He was probably gripped by the scepticism that being a derivative of TNT, a key component of the dynamite which he invented, nitroglycerine would surely be the last thing his ailing heart needed!

Back to nitric oxide. It is also a component of the now much-talked-about drug, Viagra. Enough said.

The first Muslim scientist to win the Noble Prize was Professor Abdus Salam of Pakistan. His study was on the fundamental forces of nature. Salam, who died two years ago, and his co-recipients, Steven Weinberg and Shelton Glasgow, showed that the "weak" force that causes radioactive decay and the electromagnetic force are one and the same.

In the meantime, the quest for the first Malaysian Nobel Laureate is truly on.