

editorial

Counting the years back five centuries ...



In every generation of scientists there is an intellect or two who stand heads and shoulders above others. In the first half of the 20th century it was perhaps Albert Einstein. In the later half perhaps Freeman Dyson. Who it may be for the first half of the 21st century we must wait and see.

Counting the years back four or five centuries to the beginnings of modern science takes humanity not just to Galileo Galilei, but to the legacy of intellectuals like Leonardo da Pisa, also known as Fibonacci, the father of modern mathematics and to the most unique and remarkable mind of the Italian Renaissance Leonardo da Vinci.

Presently there is an exhibit of Leonardo's drawings *Leonardo da Vinci: The Mechanics of Man* organized by the Vancouver Art Gallery in association with The Royal Collection and curated by Martin Clayton of The Royal Collection, Windsor. The works are graciously loaned by Her Majesty Queen Elizabeth II from The Royal Collection, Windsor.

On behalf of the People of Canada I would like to thank Her Royal Highness Queen Elizabeth II for making these priceless manuscripts available for public showing. I understand that this is the first time in five centuries they have been gathered together for such a public showing. During the 2010 Olympics in Vancouver, and through the gracious generosity of the Queen, the *Mechanics of Man* exhibit has been free to the visiting public.

Leonardo da Vinci was more than just one of history's greatest artists. He was one of its greatest scientists as well. In the mid 1960's with the rediscovery of the Codex Madrid, da Vinci manuscripts hidden for safe keeping centuries before deep within the manuscript collection of the National Library of Spain, a whole new chapter in the history of science was opened.

Scholars who have studied these manuscripts assert the Codex Madrid holds the keys to the beginnings of humanity's understanding of dynamics and motion, as well as clock work mechanisms like the pendulum escapement and the mechanical loom. Galileo himself admitted he knew of the work of his predecessors Fibonacci and da Vinci and admired them both to the point that he not only studied their works, but to some degree emulated their thought and style. As a young boy Galileo even thought of becoming an artist like da Vinci, but would settle to become

a Maestri d'Abaco like Leonardo da Pisa instead (see Galileo and his Inclined Plane Experiment by Briana Lyon and I at the CUPJ website).

Most do not know that since Leonardo da Vinci came from an illicit affair between his father and a pretty farm hand, the young Leonardo was never allowed to attend university. Yet we know him as the farm boy that made good in the grand Renaissance cities of Florence and Milan. As anyone who has spent time at an institute of higher learning, a university education is not always what they are claimed to be. Most scholars agree that if the young da Vinci had attended the universities of his day, he would have drowned in its mindless and inane scholasticism, and we would never have seen his creative brilliance shine through. Inertia is found in more than in the motion of heavy objects.

Leonardo was a self made mind with a relentless curiosity and a penchant for observation and thought that sprung from the earthiness of his rural upbringing with his elderly grandparents. Observing the beauty of form and function in nature on the farm is what set his course to study the form and function of the human condition in the first and most superb collection of anatomical drawings ever undertaken by an artist. Even today his anatomical manuscripts are unequalled. Anyone who has tried to draw the human condition knows the challenges that can beset an unprepared mind and an uncertain hand. The curator Martin Clayton of The Royal Collection, Windsor, has written a succinct description of the showing that is worth reading.

In an interesting interview in the New York Times Magazine in March 2009 one of the great Renaissance Minds of the 20th century, the octogenarian physicist Freeman Dyson was interviewed. No scientist of the second part of the 20th century has stood heads and shoulders above his peers more so than Dyson. Interestingly he never undertook a Ph.D., his intellect being so unique that he could hold his own in intellectual conversations with Einstein and Feynman, while dreaming of Utopian possibilities.

The NYT interview reminds us that he is "The Civil Heretic." A line that stands out in his words is "the purpose of thinking about the future is not to predict it but to raise people's hopes." He goes on to remind us that humanists like himself "contend that protecting the existing biosphere

is not as important as fighting more repugnant evils, like war, poverty and unemployment." I have always enjoyed reading Dyson's writing. I invite you to pick up and read one or more of his interesting books. As a free man he challenges us to overcome our inertia in a way that is humane and thoughtful.

Unlike most of the world we have it easy here in Canada. Visitors to the 2010 Olympics were reminded of this. Former British PM the Rt. Hon. Tony Blair was indeed correct when he said some weeks before this world gathering that he "was thankful that Canada was hosting this event during these times of uncertainty".

You may wonder why I remain CUPJ Editor in Chief. We are still searching for a qualified successor and are in the midst of negotiating for a permanent home for the CUPJ. The fall 2010 edition of the Journal may have "Canada and the North" as its theme. We also may take up the Governor General's challenge for Canadians to expand our dialogue with our aboriginal peoples and invite submissions from physics students from Canada's North.

The immense beauty and wealth of Canada is why the rest of humanity would like to live here. In the community of ideas that span from da Vinci to Dyson we have a challenge as Canadians, to see the world for its form and function, to understand its humanity and to help end its repugnant evils.

This spring 2010 edition of the CUPJ features *Physics in Medicine*. The article by Kate Montgomery about cyclotron based SPECT Radioisotope Production coincides with the recent announcement regarding the Government of Canada's response to the Report on the Expert Review Panel of Medical Isotope Production (see: <http://www.triumf.ca/headlines/current-events/canada-commits-medical-isotopes>).

We are pleased to see that these recommendations mirror to some extent the recommendations outlined in my September 2008 CUPJ editorial (see: http://www.cupj.ca/0701_editorial.pdf).

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