

Speech of Pro.

RAYMOND URGEL LEMIEUX

at the ceremony of awarding him the Prize

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Your Royal Highness, Prince Abd Allah Ibn Abd Al-Aziz,
The Crown Prince,
Your Highnesses, the Princes,
Your Eminencies and Excellencies,
Distinguished guests,
Ladies and gentlemen,

I was attracted to a life of involvement with chemistry by the enigma posed by life itself. The vast and obviously interrelated wonderments of nature held a compelling attraction much, I expect, like the celestial bodies held for the great astronomers Al-Khwarizmi and Umar Al-Khayyam. These scientists of ancient times could contribute only to that which could be observed by direct vision. Modern instrumentation allows us to visualize atoms and molecules and draw logical conclusions as convincingly as those that were drawn from the early celestial observations. For this reason, the behavior of atoms and molecules in their electromagnetic fields now hold the same fascination as did the orbits of the planets and stars in their gravitational fields to the Arab scientists over 1000 years ago.

It was the fact that small differences in molecular structure can profoundly affect fragrances, taste and color that first fascinated me with the molecules of life. In time, the urge to contribute to the body of knowledge that is concerned with living organisms became compelling. I was determined to become engaged and chose the field of carbohydrate chemistry. There, the opportunity existed to importantly contribute to the

improvement of both chemical knowledge and health care.

The application of knowledge related to living processes traditionally is a mysterious activity ascribed to the province of God. In the words of The Quran (Sura 96, Verse 5), “God taught man that which he knew not”. The potential for both good and evil is always present. The control of this force represents a continuing challenge because, surely, the restless inquiring mind of man will not settle for planned ignorance. I was impressed to learn that this fact is reflected by the Muslim point of view that theology, the philosophy of law and science, are but different aspects of one and the same thing.

It was the devotion of my family to my well-being that allowed me to achieve the schooling required as prerequisite for university studies. My country and the province of Alberta through scholarships provided the access to advanced studies. Most importantly, Canada was able and willing to invest competitively in basic, curiosity-oriented chemical research and I could become effectively engaged. The success achieved with my students and other collaborators was beyond all expectation. What could be more satisfying than to reach the climax of one’s career by being honored with his wife, in Arabia - the biblical cradle of the human race and a key contributor to our western civilization.

It was a great privilege to play a leading role in a major field of chemistry. My engagement began with a focus on the three-dimensional geometries of carbohydrate molecules and how these affect their chemical properties. Synthetic methods were developed to gain access to a wide variety of complex carbohydrate structures that pervade biological fluids and tissues. These interests, in turn, led to research with biological receptors which form complexes with carbohydrate structures including the products of the immune response for protection against disease and known as antibodies. Thus, I became a distant follower of the Arabs, Ibn-Zakariya - who provided in the 9th century A.D. the first clinical distinction between smallpox and measles, and his follower, Ibn-Rushd – who recognized in the 12th century that no one has smallpox a second time.

The honor bestowed upon me today under the patronage of King Fahd Bin Abdul Aziz Al-Saud has brought great pride and satisfaction to my family, my university and my country. I accept this honor in deep gratitude and humility. No one who can appreciate the very large number of outstanding candidates. can feel otherwise. I am exceedingly proud to share this platform with Professors Cotton and El-Sayed.

Again, I thank you for this magnificent moment in my life.