can differentiate and integrate the most elaborate expressions, frequently without a clear understanding as to what is going on. What does it mean to say that a function is differentiable or that it is integrable? When I ask this question, I want a clear-cut answer in simple terms, not the parrot-like repetition of some definition in a text book. There is far too much talk in the teaching of mathematics. If I were an architect designing a mathematics class room, I would have cut in large letters above the blackboard the motto:

Cut out the talk; what have you got?

To those of you who teach mathematics and who say to me that my program is too idealistic and that one simply can not teach mathematics properly, I must point the accusing finger. Study well your responsibility before you poison the wells. Do not, I urge you, be so pessimistic. It is as easy (really much easier) to teach mathematics correctly as to teach it incorrectly; and I can assure you that it is much more fun. As a born Irishman I am entitled to close the book for the day, before the evening is too far advanced, and looking up, say to my good companions: Let's have a little fun. *Beannacht leat;* God be with all here, may He bless the work and the fun.

CULTURAL INTERCHANGE BETWEEN THE SOVIET UNION AND THE UNITED STATES[1]

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THROUGHOUT many generations in which creative intellectual activity was the privilege only of the few in Russia, Russian scientists, authors and composers nevertheless produced works of the highest quality which have greatly enriched the culture of the entire world. Mendelejeff, Metchnikoff, Iwanowski, Winogradsky, Pavlov, among others, may be mentioned as examples of men whose contributions are basic to modern chemistry, agronomy and medicine.

In the Soviet Union education and pure scientific and technological training have become the privilege of the many and have been vigorously fostered by the government. A great development of mathematics and physics, agriculture, geography, geology, the biological and medical sciences and the technologies has resulted and has afforded the foundation without which Russia's magnificent achievements in the present war would never have been possible.

What the Soviet Union has actually achieved in pure science and technology within a single generation may be taken as a measure of how great her contribution to world culture and well-being may become under conditions of peace. Science can discover and develop the necessary means for material comfort and well-being; no well-informed person seriously doubts that, I believe. There are, however, far subtler and more complex problems for the solution of which scientific method and scientifically minded men must give their best efforts. For instance, living which brings satisfaction and creative possibilities to the individual and the group is by no means solely the result of material well-being, but of complex physiological and emotional adjustments producing inner harmony; the conditions of this inner harmony I sincerely believe are ultimately discoverable by scientific method. The complex conditions necessary for economic and social adjustment and well-being, I believe, too, are ultimately discoverable through rational methods, and are in considerable measure capable of achievement, in a world of men of good-will.

Any scientist knows that such complex problems as these require the joint effort of many people, with many divergent backgrounds, working from many different angles of approach. From the point of view of the social or natural scientist, therefore, diversity of experience and of social and economic organization is to be welcomed and valued. We need the common efforts and friendly rivalry of Soviet and American, of French, British and Chinese and every other kind of social and natural scientist if a better and more harmonious world is to evolve.

May I repeat. To the scientist striving for understanding and peaceful evolution, diversity is welcomed. Areas of difference between people of different nations should be precisely and rigorously defined in order that apprehension should be confined within the limits thus prescribed, leaving the whole world of ideas outside these limits as the common heritage of mankind. It is when the fear arises that revolution or conquest may impose an alien order by coercion that suspicion and ill-will appear. Let every citizen of our two great countries resolve that change shall henceforth be by cooperative, peaceful evolution and never by such brutal conquest as our common enemies have attempted.

I am asked to speak concretely about the cooperation that now exists between American and Soviet scientists and the means by which this cooperation could be made more fruitful in the future. Cooperation at present is terribly handicapped by the exigencies of

[1] Address before the dinner of the American Russian Institute, New York, October 20, 1944.

the war. What we need first, of course, is to know what Soviet scientists are doing and to have them know what we are doing. An important beginning has been made by the founding in October, 1943, of *American Review of Soviet Medicine*. Various commissions of scientists sent from Britain, Canada and the United States to Russia and by the Soviet Union to these countries have been helpful. But these measures are really only a meager beginning. We must have the fullest practicable two-way diffusion of scientific journals and books and ultimately, of course, of students, research workers and exchange professors.

Ways should be found as soon as possible to set up means for the importation of complete files of scientific periodicals and books into both countries and covering the entire period of the war during which inter-communication has been interrupted. This interchange should of course continue indefinitely into the future.

Agencies already exist in this country for indexing and abstracting Russian scientific literature in several areas of science. *Biological Abstracts* and *Chemical Abstracts* are examples. These agencies at present are handicapped by the impossibility of obtaining current Russian journals. A plan is at present being explored by *Biological Abstracts* looking to establishment of a central agency to survey all current Russian periodical literature in the biological sciences, to translate the worth-while articles into English and to republish in English as perhaps quarterly journals. Such a plan would seem most worthy of support. Would not a similar central agency in Russia for the literature in English be worth establishing?

Plans should certainly be elaborated for the interchange after the war of students, investigators and teachers between Russia and America.

International scientific congresses before the war brought valuable interchange of scientists between all civilized countries. The need for these will increase as problems of health, social and economic well-being become increasingly common to all nations. Plans and means for realization of all these forms of cultural interchange should be elaborated as opportunity affords.

It is encouraging to learn that fifteen Isaac Newton scholarships for students in mathematics and physics departments in Soviet higher educational institutes were recently established by the People's Commissariat of Education. Would it not be a useful contribution to establish scholarships in American universities in honor of great Russian scientists and to be held by English-speaking Russian students?

The common efforts of the Soviet and American Unions and of the other United Nations are now achieving victory against a barbarism which threatened to overwhelm good-will among men, scientific truth and the common weal of all mankind. Our common efforts will be equally needed after the war to enrich the culture and lay the foundations for the well-being of a world that must be kept at peace.

OBITUARY

FRERE MARIE-VICTORIN

PROFESSOR MARIE-VICTORIN, eminent botanist, met his death on July 15, 1944, while returning with four companions in his automobile from a collecting trip to Black Lake, Megantic County, in the Eastern Townships of Quebec. The trip had been organized especially to find a rare fern (*Cheilanthes siliquosa*) which grows only on the serpentine hills of that region. While returning to Montreal, at 10:30 in the evening, a collision occurred on the wide boulevard leading to St. Hyacinthe. None of the party was severely injured, but about half an hour after the accident, Frère Marie-Victorin collapsed and died from heart failure. He was in his sixtieth year, and would have completed his twenty-five years of university teaching in 1945.

Interment took place in the cemetery of the Christian Brothers at Mont-de-la-Salle, Laval-des-Rapides, near Montreal.

Frère Marie-Victorin, whose ancestors hailed from Brittany, was born on April 3, 1885, at Kingsey Falls, a tiny village in the Eastern Townships of Quebec. His father was Cyrille Kirouac, and his mother Philomène Luneau. He was baptized under the names of Joseph-Louis-Conrad. His parents having thereafter established themselves in the city of Quebec, where his father became a prominent merchant, young Conrad attended the Christian Brothers' school at St. Sauveur, and afterwards the Commercial Academy, where he was graduated in 1901, first of his class. He then entered the Christian Brothers' novitiate of Mont-de-la-Salle in Montreal, at that time situated in Maisonneuve Park, which was later to become under his initiative the Montreal Botanical Garden.

After a short stay as teacher in St. Jerome College and St. Leo's Academy in Westmount, he was attached in 1904 to Longueuil College, where he taught until 1928, and where he resided until his death. In his early twenties, he was very ill with tuberculosis for many months, and had to spend this period in the Laurentians, resting and at long last recuperating, though he remained weak for the rest of his life. It