



Comments at the Romanian Academy of Sciences

K.R. Sreenivasan
Director, ICTP

Honorable President Academician Ionel Haiduc, Vice Presidents of the Academy and other Office Bearers, Academicians and other Distinguished Colleagues:

As a person of Indian origin, I recall with great pleasure the strong connection that has existed between Romania and India, at least from the beginnings of the 19th century, during which time a number of Romanian poets, philosophers and linguists were drawn to India. Since 1947, when India became independent, many state visits have occurred in both directions, as have numerous other high-level delegations. I recall with even greater pleasure another Indian who was honored with a Doctorate Honoris Causa from Romania. This was the grand poet Rabindranath Tagore (figure 1), who visited this country in 1926. You will be aware that Tagore received the 1913 Nobel Prize in literature, for which the citation reads as follows: “Because of his profoundly sensitive, fresh and beautiful verse, by which, with consummate skill, he has made his poetic thought, expressed in his own English words, a part of the literature of the West”. Allow me to recite a verse from Gitanjali, one of Tagore’s collections of poems, literally meaning “song offerings”. The verse is entitled “Mind without Fear” and reads as follows.

*Where the mind is without fear and the head is held high;
Where knowledge is free;
Where the world has not been broken up
into fragments by narrow domestic walls;
Where words come out from the depth of truth;
Where tireless striving stretches its arms towards perfection;
Where the clear stream of reason
has not lost its way into the dreary desert sand of dead habit;
Where the mind is led forward by thee into ever-widening thought and action —
Into that heaven of freedom, my Father, let my country awake.*

Gitanjali was written in 1912 when the country was still in bondage, and, as a true patriot, Tagore was expressing his yearning for India’s freedom, and, even more, for the freedom of mind for all its citizens. Your own country has suffered much in various forms of bondage, and you will no doubt appreciate the enormous need for the freedom of mind. It is this appreciation that has finally enabled your country to escape a long struggle and emerge into modernity.

When I subsequently settled down in the US, I came in contact with several first-rate Romanian mathematicians and physicists, young and old, who are doing exceedingly well. This reflects the strong Romanian tradition



Fig.1. Rabindranath Tagore
(1861-1941)



in mathematics and physics, in particular, and other areas of science, in general. Many excellent scientists indeed remained in Romania and built up interesting institutions and activities. Among them are Horia Hulubei and the other directors of the National Institute of Physics and Nuclear Engineering, both before and after him (see figures 2). You may know that Professor Ursu spent a considerable time at ICTP and translated into Romanian (see figure 3) the book “Ideals and Realities”, which is a collection of essays and speeches of the founding director of ICTP, Professor Abdus Salam.

Despite this strong tradition and numerous successful Romanian scientists, there have been difficulties in doing competitive science within Romania. Institutions such as the Academy and the National Institute of Physics and Nuclear Engineering have had their set-backs. It is in this context that the contact between Romanian scientists and my Centre, the ICTP, has been very useful, and

I would like to say a few words

about this connection before I come to the present. The connection between Romanian scientists and ICTP is as old as ICTP itself, and the very first scientist from Romania to enter ICTP in 1964 was S. Tzitzeica. The very first Scientific Council of ICTP had as its secretary a Romanian physicist, Professor A. Sanielevici (figure 4), who was Professor in the Faculty of Physics and Mathematics in Bucharest University, a Corresponding Member of your Academy, and worked for some time also in IAEA. Let me also note that Professor Oliviu Gherman (see figure 5) was a scientist at ICTP for something like a dozen years. As you no doubt remember, he rose in the political hierarchy to become the President of the Romanian Senate and Ambassador to France. This connection still continues and figure 6 shows a picture of two of your colleagues, Professors Valentin Vlad and Sabin Stoica, who have visited our Centre several times, including very recently. In terms of statistics, table 1 tells you part of the picture. Roughly 50 scientists from Romania visit ICTP every year and spend, on the average, 1.5 months each. I record with some satisfaction that 26 out of the 55 visitors in 2006 were women (see table 2).



Fig. 2a. Horia Hulubei
(1896 - 1972)



Fig. 2b. Alexandru Proca
(1897 - 1955)



Fig. 2c. Serban Titeica
(1908 - 1985)



Fig. 2d. Ioan Ursu
(1928 - 2007)



Fig. 3. Romanian Translation of
Abdus Salam's “Ideals and Realities”



Fig. 4. The first scientific council of ICTP. In 1964: A. Salam, P. Budinich, L. Liebermann, A. Sanielevici, H. Seligman, J.R. Oppenheimer

It is in this context that ICTP-Ro has been conceived in Bucharest under the Horis Hulubei Foundation. Our hope is that, through the strong interaction that already exists between ICTP and the Romanian scientists, this new Centre will evolve into a great institution to which many distinguished visitors from all parts of the world will be drawn. More broadly, the goals of the Centre will be to organize a number of high-level scientific conferences, workshops and schools, and attract world leaders to them, including some expatriate Romanians, thereby providing a window to a broad international community; raising the interest and level of young Romanian scientists by exposing them to the most advanced areas of research; and providing a platform for building scientific groups in emerging areas. It would also provide pedagogical courses for young students from neighboring countries.



Fig. 6. Valentin Vlad, Katepalli Sreenivasan and Sabin Stoica

As mentioned earlier, science in your country has seen accomplishments as well as marginalization. Throughout this time, however, this Academy has been a pillar of strength, and has fostered all aspects of science, culture and arts. I congratulate the Academy for its steadfastness.

Coming out of the past tribulations, Romania is now embarking on a path to prosperity. There are already many signs of this change. It is precisely during times of such upward mobility that a country should renew its plans for scientific development. It must also aim to be a beacon of light for the neighboring countries where conditions are less satisfactory even now.



Fig. 5. Oliviu Gherman
ICTP Scientist (1971-1983)

We at ICTP have long experience in such endeavors. It is through ICTP's existence that scientists from developing countries know about Trieste and neighboring scientific institutions in Trieste have reached high levels of distinction. We believe that this example will be the right model for ICTP-Ro. My visit to the scientific institutions in Bucharest is meant to strengthen further the cooperation that exists between Romania and ICTP. Indeed, we have already begun to organize some programs (see figure 7) without waiting for legal mechanisms to be put in place in full.



The Abdus Salam International Centre for Theoretical Physics



Finally, I recognize that the Honoris Causa conferred upon me today is a symbol of your goodwill towards my institution, and, for this reason, I have particular pleasure in accepting it. Thank you all for this honor.

Since I began with some comments on Tagore, allow me to echo his statement made at the end of his visit to Romania: "I like your country! It is civil and hospitable! I will take good memories with me! I wish your people all the best!"

Advanced Workshop
on
Spin and Charge Properties of Low Dimensional Systems
29 June - 4 July 2009
Sibiu, Romania

TOPICS

- Spin Electronic Phenomena in Low Dimensional Systems
- Quantum Dot Devices for Quantum Computation
- New Theoretical Approaches at the Nanoscale
- Electrons and Spin Transport in Quantum Wells and Quantum Dots

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DEADLINE for receipt of applications
31 March 2009

Fig. 7. Announcement of the Advanced Workshop on Spin and Charge Properties of Low Dimensional Systems, Sibiu, Romania

Statistical Summary 1970 - 2007

ICTP visitors from ROMANIA

Year	No. of visitors	No. of person-months*
2007	69	75.68
2006	53	77.65
2005	45	69.99
2004	70	86.14
2003	44	69.86
2002	42	77.33
2001	54	85.77
2000	58	92.51
1999	59	99.39
1998	78	103.65
1997	66	94.53
1996	63	72.03
1995	70	85.15
1994	69	95.79
1993	66	91.45
1992	58	88.67
1991	63	75.08
1990	44	33.92
1989	11	23.91
1988	17	20.19
1987	14	9.42
1986	6	8.72
1985	14	9.00
1984	16	12.32
1983	14	13.34
1970 - 1982	122	106.00
Total	1285	1659.50

*Number of average months spent at ICTP by scientific visitors (1 average-month= 30.417 days)

Table 1

- Visitors between 1970-2007: 1285 (2006: 53 in all, 26 females; 77.7 person months)
- Number of Associates: 24
- 2009 Associates from Romania: 4
- TRIL Fellows: 48 grants, 25 fellows
- Activities supported by OEA: 8
- A Memorandum of Understanding has been signed with the Foundation "Horia Hulubei" in February 2008 for creating a scientific centre of excellence in Romania.
- The first joint activity, the Advanced Workshop on Spin and Charge Properties of Low Dimensional Systems, will be held from 29 June-4 July 2009 in Sibiu.

Table 2