International Congress of Mathematicians 2010
ICM-2010

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The year 2010 is significant for mathematics. It marks the centenary of the founding of the Indian Mathematical Society, while a second mathematical society – the Ramanujan Mathematical Society will be celebrating its Silver Jubilee. India will be hosting the International Congress of Mathematicians (ICM) in Hyderabad during August 19 – 27, 2010. This is the first time in more than hundred years of history of the ICMs that the Congress will be held in India and only the third time in an Asian country (the 1990 Congress was held in Kyoto and the 2002 Congress in Beijing). The first ICM was held in Zurich in 1897 and the Congresses have been held continuously once every four years except for breaks during the two world wars. Initially it was an almost wholly European affair; the US and Japan started participation in a big way soon after and in the post-war period participation has grown steadily from other parts of the world. Recent Congresses have had an attendance of around 3500 delegates.

India has a long tradition of pursuit of mathematics. The recognition of zero as a number and the place value system for representing numbers with its use is an Indian innovation dating back to the early centuries of the Christian era. India had also made progress in geometry contemporaneous with the Greeks and even earlier. During the middle ages, India recorded substantial achievements in algebra as well. Aryabhata and Brahmagupta were mathematicians of the first rank. Madhava, a fourteenth century mathematician from South West India had discovered the essentials of calculus long before Newton and Leibniz. But all this was in an era when science was pursued by isolated intellectuals with no serious impact on the practical world.

From the point of view of the public at large, the most interesting happening at these congresses is the inaugural function where the Fields Medal, the highest recognition for mathematical achievement, is awarded. The Medal is considered by the mathematical community as the equivalent of the Nobel Prize in prestige, even while the monetary value of the prize is limited compared to the Nobel Prize. Ironically enough the work of most of the Economics Laureates is highly mathematical and one of them – John Nash – got the prize actually for mathematical work that was highly influential in economics. Only mathematicians under the age of forty are eligible to be considered for the Fields Medal. The medals are awarded, once in four years at the inaugural function of the Congresses. The prize is administered by an international organization – the International Mathematical Union (IMU).

Two other prestigious medals are also awarded at the inauguration of the ICMs: the Nevanlinna Prize (for work in mathematical aspects of computer science) which premiered in 1982 and the Gauss Prize (for outstanding mathematical contributions that have found significant applications outside of mathematics) initiated in 2006. At Hyderabad, a new prize, the Chern Prize, named after S S Chern, a towering figure in geometry in the twentieth century, is to be awarded for the first time to an individual whose lifelong outstanding achievements in mathematics warrant the highest level of recognition.

None of these prizes have so far gone to an Indian mathematician; however the Nevanlinna Prize for 2002 was won by Madhu Sudan, a mathematician of Indian origin. Three mathematicians of Indian origin are considered by many to be among the serious candidates for the Fields Medal at Hyderabad.

India was among the participant countries in the meetings that led up to the formation of the new IMU. Despite its role in the deliberations that resulted in the formation of the new IMU, India became a member of the IMU only in 1954 - two years after its inception. K Chandrasekharan, an eminent Indian mathematician served with distinction on the Executive Committee of the IMU for a period of twenty four consecutive years, five of them as Secretary and four as President of the Union.

The congress is built around some 200 invited talks: about 20 plenary one-hour lectures in diverse mathematical areas addressed to the mathematical community at large given by eminent figures responsible for the very evolution of the area; and the rest – sectional talks – by outstanding experts addressed to other experts in specific areas describing recent important developments there. At the Hyderabad Congress there will be two plenary talks by Indians and seven sectional talks (six by those working in India).

The Indian committee is planning a number of cultural and public out-reach events on the sidelines of the congress. Public out-reach talks are by Professors Martin Groetschel and Guenter Ziegler of Germany and Bill Barton from New Zealand.

One new feature of the Hyderabad Congress is that it will be preceded by a 2-day meeting styled "International Congress of Women Mathematicians" which will focus attention on women in mathematics. The initiative for holding this comes from the organization "European Women in Mathematics". This is the first meeting of its kind. The General Assembly of IMU will also meet in Bangalore during 16-17 August.

The Executive Organising Committee (EOC) of ICM is aware of the importance of mathematics reaching out to the public. It would like to recognize outstanding efforts made in that direction in a fitting manner. Towards this end it has instituted a one-time international prize of 1,000,000/- (Indian) Rupees (approximately 20,000/- US Dollars) for outstanding contribution to public outreach for mathematics by an individual. The prize is to be announced and awarded at ICM in Hyderabad, India.