

face à laquelle nos collègues d'Imperial College tirent le signal d'alarme : l'ambition de construire un bagage cohérent semble largement abandonnée lorsque les lycéens ont la possibilité de choisir des « briques » aux noms aussi évocateurs que « mathématiques I » et « mathématiques II » . . . ou seulement la première citée. Des actions sont entreprises pour tenter de limiter les ravages de ces réformes, en particulier l'organisation, par des professeurs d'Imperial College, de séances d'introduction aux sciences et de cours du soir à destination de jeunes des quartiers défavorisés de Londres, dans l'espoir de révéler en certains d'entre eux une fibre et un don scientifique que le système éducatif général ne leur laisse que fort peu de chances de découvrir par eux-mêmes.

Pour conclure très provisoirement sur une note plus légère (?), le thème des « mathématiques comme tueur » (*i.e.*, comme discipline vecteur privilégié de l'élimination des étudiants plus faibles) a été abordé sous deux angles : dans le contexte français en sortie de classes préparatoires, une proportion minoritaire mais non négligeable de leurs élèves finissant par se convaincre que les mathématiques n'ont pour seule utilité que de sélectionner à l'occasion des concours, à l'exclusion de toute application ultérieure, mal un temps nécessaire à confiner et éradiquer ensuite au plus vite, pour filer une métaphore de Claude Viterbo ; puis à travers une petite enquête réalisée à l'ETH Zurich et d'où il ressort que les mathématiques ne sont directement « responsables » que d'un tiers des échecs scolaires définitifs observés dans cette université.

Irish Mathematical Society

Maurice O'Reilly¹

In this article, I will introduce members of the SMF to the Irish Mathematical Society (IMS) and its activities, as well as the education system as it relates to mathematics and recent developments in support of research in mathematics in the Republic of Ireland.

The IMS

The Irish Mathematical Society (or Cumann Matamaitice na hÉireann, in Irish) had its origins in the late 1960's adopting its constitution, based on that of the Edinburgh Mathematical Society, in 1976. From the beginning, the IMS drew its membership from the whole island, both the Republic and Northern Ireland. The neutral ground of Royal Irish Academy (RIA) became the cradle of the IMS, facilitating support from all the universities. Moreover, the National Committee for Mathematics of the RIA was the Irish body recognised by the International Mathematical Union. Thus, a framework was in place both nationally and internationally. Between 1969 and 1975, in its formative years, the emerging society (as a subcommittee of the RIA) organised eight conferences in areas such as group representations, quantum mechanics, numerical analysis and complex function theory.

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Article 2 of the IMS Constitution states simply that the Society was set up for 'the purpose of promoting and extending the knowledge of mathematics and its applications'. The article continues by listing five activities in particular: holding meetings, publishing the Bulletin, organizing and supporting conferences, lectures and discussions, discovering and making known the views of its members on mathematical matters of public interest and, finally, co-operating with other organizations to achieve its purpose. It is with a view to promoting the last of these activities that I have initiated, together with the President of the SMF, an exchange of information between our two societies.

In December 2005, the Society had 266 members plus 73 student members. Of the 266, 77% were resident in Ireland, 77% had addresses in universities or institutes, while 62% had addresses in Irish universities or institutes.

Its activities

Every year since 1988, the Society has held a meeting in September, hosted by one or other of the universities or institutes of technology. In 2004, exceptionally, our usual meeting was replaced by a joint meeting with the British Mathematical Colloquium (BMC) in Belfast. It has been decided to hold the 61st BMC in Galway in 2009, again as a joint meeting. At our September meeting, speakers are encouraged to make their presentations accessible to a general mathematical audience - and this has nearly always been the case! This year, our September meeting (4 – 5th) took place in the Institute of Technology, Tralee, where papers were presented on geometry, integrable systems, differential equations, group theory, graph theory, mathematical biology and mathematics education.

The first Newsletter of the Society appeared in 1974, before the IMS emerged from the cradle of the RIA. In 1986, it was renamed the Bulletin since it was considered that 'the title did not do justice to the substance of the publication'. The Bulletin appears twice yearly and includes, for example, a record of the business of the Society, research notes, survey articles, book reviews and obituaries. The contents are available online since December 1997, on the Society website.

The IMS partially supports specialist conferences held in Ireland - typically about five every year. Recent conferences were on geometry, operator theory, general relativity, mathematics education, group theory and differential equations. A list of conferences supported since 2003 also appears on the website. The Society collaborates with the School of Theoretical Physics of the Dublin Institute for Advanced Studies (DIAS) in a two-day colloquium every December at the Institute.

The IMS supports the Irish Mathematical Olympiad by awarding the Fergus Gaines Cup to the best performer in this national competition for selection to the International Mathematical Olympiad (IMO). In addition, IMS members are active in the provision of IMO training for bright youngsters. The IMS collaborates with the Irish Mathematics Teachers Association and the Hamilton Mathematics Institute (in Trinity College, Dublin) in supporting mathematics in secondary schools through an annual competition.

Internationally, the IMS enjoys close relationships with both the London and Edinburgh Mathematical Societies, not least in the joint organisation of the BMC as already mentioned. The IMS has only two international reciprocity agreements,

one with the AMS, the other with the RSME². Closer links with the SMF are indeed overdue!

Universities and research in Ireland

There are seven universities in the Republic and two in Northern Ireland. There are also fourteen institutes of technology, eight colleges of education and three other third level colleges in the Republic supported by the state. Further information about the structure of third level education can be found on the website of the Higher Education Authority (HEA). It is from these institutions that 62% of our membership comes and in which the vast bulk of third level mathematical education takes place. As far as research is concerned, one would need to add DIAS to this list. Finally, the RIA has a key role as both a neutral and common ground for research and policy development in mathematics and mathematics education.

Two government ministries fund most mathematical activity in the Republic: the Department of Education and Science (DES) and the Department of Enterprise, Trade and Employment (DETE). Mathematics education, at all levels, is, of course, the responsibility of the DES. Research, on the other hand, is funded largely through the Irish Research Council for Science, Engineering and Technology (IRCSET) together with the HEA, in the DES, and through Science Foundation Ireland (SFI), in the DETE. These funding structures emerged in the past decade - progress has been rapid and substantial. The increase in funding has been accompanied by much discussion and debate, with diverse views emerging on the best way to support research in mathematics. In 2004, SFI identified mathematics as a discipline which was under-funded and in need of encouragement. After consultation with various parties, including the IMS, leading to SFI's Mathematical Initiative 2006, SFI issued a call for proposals for mathematical research that had 'a potential impact on enterprise, industry, science, engineering and mathematical education'. At the time of writing this article have been selected two projects for substantial support one in coding theory and cryptography, the other in mathematical modelling and computational analysis with applications in science, engineering and industry.

Recent developments

William Rowan Hamilton was born in Dublin in 1805. To mark the bicentenary of his birth, the Irish Government designated 2005 as Hamilton Year: Celebrating Irish Science. The year was marked by a great number of events involving prestigious international mathematicians and scientists, as well as significant publicity to promote science amongst the public at large. The events included the traditional commemorative walk, on the 16th October, following Hamilton's footsteps on the day he discovered quaternions, at Broombridge on the Royal Canal, Dublin, on that date, in 1843. Conveniently, last year, the anniversary occurred on a Sunday, and, moreover, the weather was fine! In 2006, for the first time, there will be a national mathematics week starting on 16th October, with events throughout the country.

As well as Hamilton Year and the launching of SFI's Mathematical Initiative, 2005 also saw the formation of a restructured committee of the RIA to 'lead, inform

² Real Sociedad Matemática Española

and guide Academy and Government policy across the full spectrum of Mathematical Sciences'. This Academy Committee for Mathematical Sciences replaced three committees with responsibilities for mathematics, mathematical instruction and theoretical and applied mechanics. The IMS is one of seven bodies represented on the Academy Committee.

The challenge of education

As in many other countries, there is considerable concern in Ireland regarding the state of mathematics education. The concern exists across a wide spectrum from mathematicians to policy makers, to students and to the public at large. The situation is complex and, of course, perspectives vary considerably. Traditionally there have been three levels of education in Ireland: primary, secondary and third level. Primary school lasts for eight years (with a typical entry age of four or five), secondary (or post-primary) school lasts for five or six years, while third level education has already been mentioned. Increasingly, the terminology 'fourth level' is used in reference to higher education from masters' level upwards. Moreover, the Bologna Declaration is influencing more and more the structure at the third and fourth levels.

One area of serious concern is the articulation between systems. For example, the approach to teaching at primary level is 'constructivist', while the emphasis at secondary level is very much driven by two state examinations (the Junior Certificate, after three years, and the Leaving Certificate after a further two, with the possibility of an additional 'transition year' immediately after the Junior Certificate). There is also concern about the mathematical background of many teachers which gives rise to a poor appreciation of the direction of mathematical development, amongst primary teachers, and excessive emphasis on mechanical skills at the expense of understanding, amongst secondary teachers.

The 2003 OECD Programme for International Student Assessment (PISA) study puts Ireland in 17th place out of 29 countries in the ranking for mathematics of 15-year olds. The mathematics score, like those of France and Germany, was close to the mean, but disappointing compared with the Irish scores in language and in science. Neither such scores nor my earlier comments on the state of mathematics education in Ireland can encompass the complexities of the issues which require sustained collaborative efforts on the part of policy makers, educators and, indeed, students. The National Council for Curriculum and Assessment (NCCA) of the DES published its Review of Mathematics in Post-Primary Education last year, inviting responses from the public at large. Thencca published a report on this consultation last april. It is likely that significant reform of the secondary level curriculum will follow.

Franco-Irish collaboration

My informal enquiries reveal that there are already many links between French and Irish mathematicians. Irish mathematicians collaborate with French colleagues in the IHES and CIRM as well as universities in Paris, Bordeaux, Lille, Lyon, Metz, Nice, Orleans and Poitiers, for example. I hope that by exchanging information about our respective societies in our publications, your Gazette and our Bulletin,

more collaborations will be encouraged and we will appreciate in more detail the situation of mathematics in our respective countries.

Websites of interest

IMS: <http://www.maths.tcd.ie/pub/ims/>
RIA: <http://www.ria.ie/>
HEA: <http://www.heai.ie/>
DES: <http://www.education.ie/>
IRCSET: <http://www.ircset.ie/>
SFI: <http://www.sfi.ie/>
PISA: <http://www.erc.ie/pisa/>
NCCA: <http://www.ncca.ie/>
Other links at: <http://www.spd.dcu.ie/moreilly/ims.htm>

Bilan de la session 2006 du CNU, section 26

Le bureau de la Section¹

Qualifications : bilan 2006

Qualifications aux fonctions de Maître de Conférences

Le nombre de candidats inscrits était de 542. Le nombre de dossiers non parvenus aux rapporteurs est de 132. Sur les 410 dossiers examinés, 284 candidats ont été qualifiés (soit 69%, proportion stable depuis au moins trois ans). Environ les trois-quarts des refus de qualification sont justifiés par une inadéquation de la candidature au domaine disciplinaire recouvert par la section.

Comme les années passées, deux critères importants ont été utilisés dans l'évaluation des dossiers, en particulier pour les candidats dont le parcours ne s'inscrivait pas de façon canonique dans les thématiques de la section.

1. L'aptitude à enseigner les mathématiques.
2. L'activité scientifique. Dans les domaines d'application des mathématiques, cette activité ne doit pas se limiter à une description de modèles classiques et une utilisation de méthodes et algorithmes éprouvés. L'évaluation prend en compte l'apport méthodologique, la mise en place de modèles originaux, le développement de nouveaux algorithmes, la validation par des applications réalistes.

Recommandations aux candidats (et aux directeurs de thèse)

¹ Emmanuel Lesigne, François Golse, Bernard Gleyse et Olivier Raimond, mai 2006