

The Royal Society of Chemistry  
Edinburgh & SE Scotland Local Section  
presents

**“A Chemistry of Music”**

a concert to celebrate International Year of Chemistry 2011

performed by

**Hebrides Ensemble**

Monday, 12 December 2011 at 8.00pm  
Canongate Kirk, Royal Mile, Edinburgh

**Programme:**

- 1) Ludwig van Beethoven – Piano Trio in B-flat major, op.11
- 2) Alexander Borodin – Cello Sonata in B minor
- 2) Julian Wagstaff – *A Persistent Illusion* (for clarinet, cello and piano)

Jean Johnson – Clarinet

Will Conway – Cello

Scott Mitchell - Piano

**HEBRIDES  
ENSEMBLE**

# Welcome

Hello, and welcome to the Canongate Kirk for this very special concert, celebrating International Year of Chemistry 2011.

International Year of Chemistry 2011 (IYC 2011) is a worldwide celebration of the achievements of chemistry and its contributions to the well-being of humankind. Its goals are to increase the public appreciation of chemistry in meeting world needs, to encourage interest in chemistry among young people, and to generate enthusiasm for the creative future of chemistry. Under the unifying theme "Chemistry—our life, our future," IYC 2011 offers a range of interactive, entertaining, and educational activities for all ages, and it is in this context that tonight's concert has been produced.

Entitled "A Chemistry of Music", this concert is sponsored by the Edinburgh and SE Scotland Local Section of the Royal Society of Chemistry. It is their vision and support that has allowed tonight's event to take place. It has allowed Edinburgh-based composer Julian Wagstaff to spend time with researchers, industrial chemists, school teachers and pupils, and to compose a new piece inspired and informed by the often groundbreaking work undertaken in the field of chemistry in this part of Scotland. We shall hear the first performance of this work this evening – it is the third and final item on the programme.

We begin the concert with an old favourite by Beethoven (the Trio op. 11), followed by the Cello Sonata by the Russian composer and professional chemist Alexander Borodin. Although not widely performed, this piece deserves to be heard, and we are thrilled that the internationally renowned Hebrides Ensemble are available to play it for us this evening, along with the other two pieces on the programme.

Many thanks for joining us this evening at this unique event. Welcome once again, and enjoy the concert!

## 1) Ludwig van Beethoven – Piano Trio in B-flat major, op. 11

The trio is in three movements:

1. Allegro con brio
2. Adagio
3. Tema con variazioni

This piece for clarinet (or violin), cello and piano was composed in 1798 and is sometimes known as the "Gassenhauer Trio". The German word "Gassenhauer" literally means "lane-basher", and refers to a hit song or melody that people might sing while walking down one of Vienna's lanes, for example. This is a reference to the third movement of the piece, which is in the form of nine variations on a theme from the opera *L'amor Marinaro* by Joseph Weigl, which was very popular at the time.

The story goes that Beethoven performed the third movement in a musical duel with the pianist and composer Daniel Steibelt. Stiebelt was unimpressed, however, and responded by improvising his own variations on Joseph Weigl's theme. Beethoven was incensed: he grabbed Steibelt's score, turned it upside down and ironically bashed the notes out on the piano keyboard with one finger. Predictably, the two men became fierce rivals for the remainder of their lives, and the episode caused great embarrassment to the host of the evening, Count Moritz von Fries.

## 2) Alexander Borodin – Cello Sonata in B minor

This sonata, for cello and piano, is in three movements:

- I. Allegro
- II. Pastorale: Andante dolce
- III. Maestoso – Presto

The piece is fascinating for several reasons. Borodin was not only a composer but also a professional chemist, and studied in Heidelberg, Germany at almost exactly the same time as the Edinburgh chemist Alexander Crum Brown (see below). While there, Borodin lived next door to a violinist whom he heard practicing Bach's G-Minor Unaccompanied Violin Sonata. Borodin began work on a cello sonata based on the fugue subject from the second movement, but never completed it. It was finally completed by the émigré Soviet musicologist Mikhail Goldstein and published in Hamburg in 1982. Goldstein gained notoriety in the 1960s by convincing the Soviet musical establishment of his discovery of a hitherto unknown Russian romantic composer. The "discovery" was in fact a hoax.

## 2) Julian Wagstaff – A Persistent Illusion (for clarinet, cello and piano)

My brief in writing this piece was that it should celebrate the past, present and future of chemistry in this part of Scotland. The title refers to Einstein's observation that the distinction between the past, present and future is merely a "stubbornly persistent illusion".

The work is in three movements, none of which have titles. The first is an imagined three-way dialogue between Alexander Crum Brown (1838-1922), a professor of chemistry at Edinburgh University and a pioneer in the diagrammatic representation of compounds, the Russian composer/chemist Alexander Borodin (1833-1887) and the chemist Joseph Black (1728-1799), who discovered carbon dioxide a century before. The motif recalls the opening movement of the Borodin cello sonata. The second movement (of which the first section is essentially twelve-tone while the latter section essentially tonal) represents the process of chemical crystallisation, with the piano crystallising chords from the notes carried by the other two instruments. The third movement derives from my workshops with school pupils and teachers in Edinburgh schools. Participants were asked to produce note patterns on manuscript paper inspired by their knowledge of chemical structures and formulae, and everything in this movement is derived from these ideas (including the "twelve-bar blues" section at the end of the movement). I have tried to capture something of the exuberance and fun that I encountered in the classroom, as well as deeper considerations regarding the nature of our world.

***The following pupils and staff of Balerno High School and Gracemount High School contributed ideas that informed the final movement of my piece, and they may all properly be considered contributors to this work. With apologies for any unintentional spelling errors they are: Daniel Webster, Hannah Fisher, James Black, Larry Mazadza, Scott Lobban, Hannah Cooper, Daniel MacDonald, Saif Hamid, Siân Traynor, Caitlin Lowe, Aiden Stenton, Patrick Dalziel, Georgia Rutherford, Gabriel Starr, Becky McBeath, Stuart McDonald, Eilidh Cadden, Iman Bengharbia, Lorna Muir, Abby Harrity, Joanna Campbell, Sandy Waller, Rebecca Jones, Holly Henderson, Winnie Ho, Calum Scott, Reika Chan, Rachel Hastie, Emma Kidston, Chloe Ferguson, Megan Johnston, Jonty Small, Chris Robb, Gavin Barr, Reece Weir, Scott Sinclair, Sarah McArthur, Niamh Quigley, Michael Ahari, David Robinson, Fiona Lough, Kelsey Aitken, Omer Khalafalla, Becky Cashin, John Alison, Mickey Hong, Natalie Duncan, Gemma Hogg, Maxis Antwi, Sophie Anderson, Stacey Balfour, Madeena Younis, Gesley Aguirre, Liam Maclean, Emma Hall, Kimberley Blair, Jake Laidlaw.***

## Biographies and Acknowledgements

### Hebrides Ensemble

Hebrides Ensemble is Scotland's foremost contemporary music group, specialising in new, twentieth and twenty-first century chamber music, music theatre and chamber opera. Led by the cellist and conductor William Conway and drawing upon the finest musicians within Scotland and Europe, Hebrides Ensemble tours frequently to venues from the far North of Scotland to the Wigmore Hall, performs at international festivals and broadcasts and records regularly. Acclaimed for imaginative and innovative programming and presentation of works and its outstanding quality of performance, the group has recently been invited to join the prestigious Re: New network of European contemporary music ensembles. The recent nomination and short-listing in the Chamber Music category in the 2009 Royal Philharmonic Society Awards was a welcome confirmation of our growing success.

Website: [www.hebridesensemble.com](http://www.hebridesensemble.com)

### Royal Society of Chemistry

The Royal Society of Chemistry (RSC) is the UK professional body for chemical scientists and an international learned society for advancing the chemical sciences. Supported by a network of over 47,500 members worldwide and an internationally acclaimed publishing business, their activities span education and training, conferences and science policy, and the promotion of the chemical sciences to the public.

The RSC Edinburgh and South East Scotland Local Section is one of the five local sections in Scotland. The local section runs a programme of activities throughout the year, typically covering the themes of scientific lectures, public lectures, school demonstrations and social activities. The local section also has a committee which meets several times each year to discuss ideas and initiatives to meet the needs of local members.

Website: [www.rsc.org](http://www.rsc.org)

### Julian Wagstaff

Julian is a composer, writer and guitarist based in Edinburgh. Many of his works are concerned with the frontier between "popular" and "serious" music. His Piano Quintet appears on the Edinburgh Quartet album *Frontiers and Bridges*, on the Circular Records label. His opera *The Turing Test* was a sell-out success on the 2007 Edinburgh Fringe, and was cited by the novelist Alexander McCall Smith as a cultural highlight in the *Daily Telegraph's* Review of the Year. Julian's musical *John Paul Jones* was performed in concert by the Scottish Chamber Orchestra, Consort of Voices and guest soloists in the Queen's Hall, Edinburgh in 2010. Julian holds a PhD in musical composition and has just completed a term as Composer in Residence at King's Buildings, the science campus of Edinburgh University. He is currently working with David Williams, former general manager of Scottish Ballet, on plans for future UK tours of *John Paul Jones* and *The Turing Test*. Julian's music can be found on the Internet at [www.julianwagstaff.com](http://www.julianwagstaff.com).

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