Preface

Rodney J. Baxter has been a pioneering force in statistical mechanics and mathematical physics ever since the publication of his solution of the eight-vertex model nearly thirty years ago. His contributions have been recognized by numerous awards and distinctions. These include the Boltzmann Medal, the Dannie Heinemann Prize and Fellowship of the Royal Society. His work has been of such originality and has had such an impact in so many areas of mathematics and physics that it may truly be said that his work has revolutionised these fields.

The Baxter Revolution in Mathematical Physics workshop was held in honour of Rodney Baxter's 60th birthday at the Australian National University, February 13–19, 2000. It highlighted his pioneering contributions in exactly solved models in statistical mechanics which have inspired crucial developments in other key areas of mathematical physics. The workshop encompassed those topics where Rodney's work has been most influential, including recent developments in exactly solved lattice models, integrable quantum field theory, quantum groups, knot theory, q-series and combinatorics, along with their applications in statistical physics.

The workshop was supported as an External Activity of the Asia Pacific Center for Theoretical Physics and a Centre for Mathematics and its Applications National Research Symposium. It also received support from the Centre for Theoretical Physics and the School of Mathematical Sciences at the Australian National University. There were more than 50 talks and some 76 participants from Australia, Brazil, China, France, Germany, Japan, Korea, The Netherlands, Russia and the United States.

The workshop was opened by Barry McCoy who presented a memorable overview of Rodney's many revolutionary accomplishments. These included the remarkable solution of the eight-vertex model in 1971, the invention of corner transfer matrices in 1976, the creation of the RSOS models in 1984 and his present work on the chiral Potts model. The text of this talk is published in *The Physicist* **36**, No. 6 (1999), pp. 210–214 and is reprinted here in full. Among the most famous of Rodney's achievements discussed are the discovery of the Yang–Baxter equation, the introduction

of Rogers–Ramanujan identities into physics and the discovery of continuously varying critical exponents.

During the workshop Vaughan Jones gave a public lecture on knots to a packed audience. Rodney delivered a light-hearted address entitled "Models and stars I have known" in which he included a tribute to Ken Le Couteur and Elliott Lieb, who shaped his early career. He also pointed out that, surprisingly enough, his early work on the Percus–Yevick equation is as well cited as his famous work on the eight-vertex model.

The workshop concluded with a barbecue and included a trip to the Gundaroo Pub some 30 miles outside of Canberra where the conference banquet of steak and kangaroo tail soup was followed by a night of dancing to an Australian country style band.[1]

Finally, we take this opportunity to wish Rodney, and his wife Elizabeth, the very best for all the good years ahead!

> Murray Batchelor, Vladimir Bazhanov, and Paul Pearce
> *Guest Editors*

I would like to take this opportunity to add my own congratulations and warmest good wishes to Rodney and Elizabeth.

I have known Rodney for more than half of his life so far and in all this time have greatly admired his work in science and, on some occasions, also his skills in beer making. Keep well Rodney. There are still many unsolved problems in statistical mechanics which need your "doing sums."

> Joel L. Lebowitz
> *Editor-in-Chief*

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[1] A pictorial record of the lecturers and some of the social activities can be found at http://www.maths.anu.edu.au/conferences/Baxter2000/photos.html