Preface

Yuri Bahturin · Michael M. Parmenter

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This special issue of “Acta Applicandae Mathematicae” contains papers submitted to the Atlantic Algebra Centre (AAC) and closely related to the Second International Workshop “Groups, Rings, Lie and Hopf Algebras” which was organized by AAC on August 15–18, 2007. The first event in this series was held at Memorial University of Newfoundland in St. John’s, Newfoundland, Canada, on May 28–June 1, 2001. The Proceedings volume of that workshop was published in 2003 by Kluwer AP as volume 555 in the series “Mathematics and Its Applications”.

Atlantic Algebra Centre, affiliated to Memorial University of Newfoundland (MUN) and Atlantic Association for Research in Mathematical Sciences (AARMS), began its work on September 1, 2006, based on the traditional strength in Algebra at Department of Mathematics and Statistics of MUN. The mission of AAC is to support and promote research and graduate studies in Algebra in the universities of Atlantic Canada. AAC supports the research of graduate students and postdoctoral fellows. It organizes several mini courses a year in advanced areas of Algebra, given by world renowned mathematicians. Annually, AAC organizes one or more International workshops/conferences, such as “Groups, Rings, Lie and Hopf Algebras” in 2007 and “Graded Algebras and Superalgebras” in 2008.

The second workshop in the series “Groups, Rings, Lie and Hopf Algebras” took place on August 15–18, 2007, at the Marine Station of Memorial University of Newfoundland in Norris Point, NL, on the west coast of Newfoundland, surrounded by Gros Morne National Park. Such an environment creates a very productive atmosphere for the meeting and provides close contact between the participants, in particular between different generations of researchers. The participants were offered 10 survey/research lectures by renowned specialists in the entitled areas of the workshop. There were also a number of contributed talks, also of high scientific value.

This collection includes papers from all areas mentioned in the title. For example, the area of Lie Theory and Algebraic groups is represented by the paper of Alexander Za-

Y. Bahturin (✉) · M.M. Parmenter
Memorial University of Newfoundland, Newfoundland, Canada
e-mail: bahturin@mun.ca

lesski “On Eigenvalues of Group Elements in Representations of Simple Algebraic Groups and Finite Chevalley Groups”. One of the main focuses of the workshop was the study of different approaches to the classification of finite-dimensional Hopf algebras. In this collection of papers we have three papers where Hopf algebras are the main topic: Nicholas Andruckiewitshch and Walter Ferrero’s “The Beginnings of the Theory of Hopf Algebras”, Margaret Beattie’s “A Survey of Hopf Algebras of Low Dimension” and David Radford’s “Pointed Hopf Algebras—From Enveloping Algebras to Quantum Groups and Beyond”. The methods of Hopf algebras are also widely used in the paper of Mikhail Kotchetov “Gradings on Finite-Dimensional Simple Lie Algebras”. Several papers are devoted to a close area of group and semigroup algebras, such as Eric Jespers’ “Semigroup Algebras and Noetherian Maximal Orders”, Yuanlin Li and Mike Parmenter’s “Graded Reversibility in Integral Group Rings”, Erhard Neher’s “Invertible and Nilpotent Elements in the Group Algebra of a Unique Product Group”. Gradings by groups and action of groups naturally fit into the framework of Hopf algebras, and in addition to the already mentioned papers of Kotchetov and Li–Parmenter there is one more paper in this category, namely Allen Herman’s “Invariants for Equivalence of Central Simple G -algebras”. The paper of Candis Holtz and Kenneth Price “Normal Quadratics in Ore Extensions, Quantum Planes, and Quantized Weyl Algebras” belongs to the boundary area between Hopf algebras and rings. The paper of Alexei Gordienko “Regev’s Conjecture and Codimensions of P. I. Algebras” treats polynomial identities in associative algebras. One more paper with pure Ring-Theoretic flavour is Xiande Yang’s “A Survey of Strongly Clean Rings”.

This volume was prepared jointly by Yuri Bahturin and Mike Parmenter.