PREFACE

The present issue of the *Novi Sad Journal of Mathematics* contains the proceedings of the VIII International Conference "Algebra & Logic", held in Novi Sad, September 21-23, 1998. This conference was founded back in 1980 by Yugoslav algebraists from Novi Sad, Belgrade and Skopje, under the name "Algebraic Conference" (the name "Algebra & Logic" was established in 1984, at the fourth meeting). It was primarily conceived as a forum for exchanging ideas in various fields of algebra (and later on, of mathematical logic) between Yugoslav algebraists. However, the 8th meeting "Algebra & Logic" was the first that has grown up to an international level. Its programme committee was composed of distinguished specialists in algebra, logic and discrete mathematics from six countries: Germany, Hungary, The Netherlands, Poland, Russia and Yugoslavia. Six plenary lectures and a number of 20-minute talks delivered by matematicians from Bosnia and Herzegovina, Great Britain, Hungary, Macedonia, Poland, Romania, Russia, Tajikistan, U.S.A. and Yugoslavia, made the Conference truly international in spirit.

Let us remind of the hosts of the previous conferences in this series: I Skopje (1980), II Novi Sad (1981), III Beograd (1982), IV Zagreb (1984), V Cetinje (1986), VI Sarajevo (1987), VII Maribor (1989) and VIII Novi Sad (1998). The nine-year gap from the previous meeting was, of course, caused by the turbulent events on the Balkans in the last decade and disintegration of the previous Yugoslavia. We tried to revive our Conference after a very long time, and we sincerely hope that it will continue to take place in many years to come, resulting in fruitful meetings of those who share the fascination of mathematics, and especially, of algebra and mathematical logic.

We selected 15 papers for the present proceedings volume. The range of published research and survey papers is indeed very wide. As first, the paper by Ershov covers some topics in topology with significant applications in computer science; these recently discovered connections are today developing into a new theory, providing a number of exciting results and new insights into the mathematical theory of computation. Discrete mathematics and

computer science are represented by the subsequent two papers, by Acketa (combinatorial inequalities), and by Blažević, Budimac and Ivanović (graph rewriting based program languages), respectively. Bogdanović, Imreh, Ćirić and Petković present a comprehensive survey on the theory of directable automata. The paper by Bošnjak and Madarász deals with some problems of universal algebra. The two papers by Crvenković, Dolinka and Marković give an account on representations of complete directed graphs by groupoids and on different algebraic questions that arise concerning these interesting structures, especially decision problems. The Macedonian algebraic school is represented here by three papers dealing with groupoid theory, vector valued semigroups and theory of designs. The short overview of some recent results in clone theory by Doroslovački, Pantović, Tošić and Vojvodić is followed by two papers by Dudek, and by Dudek and Jun, discussing Hilbert algebras, a special class of pointed groupoids (it seems that groupoid theory came up as the main topic of this collection). Finally, mathematical logic is represented by the paper of Ghilezan (λ-calculus), while the paper of Romano investigates semigroups from the standpoint of constructive algebra.

We do hope that our selection of papers will be interesting and useful to a wide readership, and that the investigations presented here will be successfully continued through a large number of applications in various branches of mathematics, contributing thus to a further growth of scientific knowledge.

The Conference and the printing of this Proceedings were supported by the Ministry of Science and Technology of Republic of Serbia.

Siniša Crvenković and Igor Dolinka
Editors of the Proceedings Volume