Jonathan Leech


I. I continued an ongoing research project in noncommutative lattice theory. In detail:

A. I began writing a monograph entitled *Introduction to Noncommutative Lattices* that by now is largely complete. I am currently in the process of revising and/or upgrading several sections as well as finalizing both the general introduction and the various chapter introductions. In connection with the upgrading/ revising process,

B. I have also coauthored several papers:

“Skew Boolean algebras derived from generalized Boolean algebras”, written with Matthew Spinks and accepted for publication in *Algebra Universalis*.

“Associativity of the $\triangledown$-operation on bands in rings”, written with Karin Cvetko-Vah. This will very likely appear in *Semigroup Forum*. We are awaiting final approval from the referee.

“Multiplicative sets of idempotents in rings & their induced ring decompositions” also written with Karin Cvetko-Vah. Although initiated during my sabbatical, this paper has gone through several major revisions, and will be submitted.

II. A colleague, Desmond FitzGerald, and I arrived at a tentative outline of a second book on inverse monoids. This project will probably get underway this coming summer and will occupy our attention for a year or two to come.

III. During my spring sabbatical I spent a week in New Zealand and eight weeks in Australia. The first two weeks were spent visiting cousins in New Zealand and Sydney. One highlight of some interest was a visit to the NZ film site of Hobbiton. Our second week in Sydney (our third on the trip) was spent in residence at the University of Sydney as a guest of David Easdown and staying at the campus hotel. While there I did initial research on aspects of the inverse monoid book. Then we spent three weeks in residence at the University of Tasmania, staying with Des FitzGerald and his wife. (He had stayed with us for three weeks some thirteen years earlier). This was also spent in doing preliminary work on our monograph project. Then it was off to Melbourne for a few days of R&R, although I did pay a two-hour visit to Marcel Jackson at LaTrobe University. Our last sixteen days were spent with a retired mathematician, Bob Bignall with whom I have previously published work. (Matthew Spinks, mentioned above, was his Ph.D. student.) I spent most of my research time reading through his dissertation and other subsequent research, some of the material of which will be incorporated into the noncommutative lattice monograph. And yes, besides research and study, a good bit of time was also spent being delighted tourists!