

## REVIEWS

The Association for Symbolic Logic publishes analytical reviews of selected books and articles in the field of symbolic logic. The reviews were published in *The journal of symbolic logic* from the founding of the JOURNAL in 1936 until the end of 1999. The Association moved the reviews to this BULLETIN, beginning in 2000.

The Reviews Section is edited by Herbert Enderton (Coordinating Editor), Geoffrey Hellman, Thomas Jech, Wolfram Pohlers, and Philip Scowcroft. Authors and publishers are requested to send, for review, copies of books to *Herbert Enderton, Association for Symbolic Logic, Mathematical Sciences Bldg. 7332, UCLA, Los Angeles, California 90095-1566, USA.*

In a review, a reference “JSL XLIII 148,” for example, refers either to the publication reviewed on page 148 of volume 43 of the JOURNAL, or to the review itself (which contains full bibliographical information for the reviewed publication). Analogously, a reference “BSL VII 376” refers to the review beginning on page 376 in volume 7 of this BULLETIN, or to the publication there reviewed. “JSL LV 347” refers to one of the reviews or one of the publications reviewed or listed on page 347 of volume 55 of the JOURNAL, with reliance on the context to show which one is meant. The reference “JSL LIII 318(3)” is to the third item on page 318 of volume 53 of the JOURNAL, that is, to van Heijenoort’s *Frege and vagueness*, and “JSL LX 684(8)” refers to the eighth item on page 684 of volume 60 of the JOURNAL, that is, to Tarski’s *Truth and proof*.

References such as 495 or 280I are to entries so numbered in *A bibliography of symbolic logic* (the JOURNAL, vol. 1, pp. 121–218). Similar references containing the fraction  $\frac{1}{2}$  or a decimal point (such as  $70\frac{1}{2}I$  or 3827.I) are to *Additions and corrections to A bibliography of symbolic logic* (the JOURNAL, vol. 3, pp. 178–212).

PATRICK BLACKBURN, MAARTEN DE RIJKE, and YDE VENEMA. *Modal logic*. Cambridge tracts in theoretical computer science, no. 53. Cambridge University Press, Cambridge, New York, etc., 2001, xxii + 554 pp.

Modal logic is a very broad field, which has demonstrated its usefulness mostly through applications in philosophy, linguistics, and computer science, and occasionally also to mathematics. Yet, the variety of textbooks available for the would-be student is not as rich as in other disciplines of logic. The choice is between Goldblatt, *Logics of time and computation* (JSL LVI 1495), Hughes and Cresswell, *A new introduction to modal logic* (JSL LXII 1483), and Chagrov and Zakharyashev, *Modal logic* (Clarendon Press, Oxford University Press, 1997). Now Patrick Blackburn, Maarten de Rijke, and Yde Venema, who at one stage worked together in Amsterdam, have added another one to this list. It is a book of seven chapters and more than 500 pages, a book that is highly readable and informative but not without problematic aspects.

It starts with a chapter introducing the basics of modal logic: normal modal logics, consequence relations, frames, models, and general frames. The authors introduce both the plain modal language based on a single operator as well as abstract similarity types, allowing for any number of operators of any arity. Though the book clearly focuses on the basic case (one unary operator), many examples are provided showing the usefulness of the more abstract approach (tense logic, propositional dynamic logic, since and until logic, and