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 Steve Awodey (Managing Editor), John Baldwin, John Burgess, Mark Colyvan, Anuj Dawar, Mirna Džamonja, Marcelo Fiore, Hannes Leitgeb, Roger Maddux, André Nies, Carsten Schürmann, Kai Wehmeier, and Matthias Wille. Authors and publishers are requested to send, for review, copies of books to *ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604, 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 49*5* or 280*1* are to entries so numbered in *A bibliography of symbolic logic* (the JOURNAL, vol. 1, pp. 121–218).

RALF KRÖMER. *Tool and object: A history and philosophy of category theory.* Science Networks. Historical Studies, vol. 32. Birkhäuser, Basel, 2007, xxxvi + 367 pp.

Ralf Krömer's book is the first global and comprehensive study of the history and philosophy of category theory. It is very well-informed, interesting, stimulating and should be read by historians and philosophers of mathematics. The main thesis of the book is that a form of pragmatism best describes the implicit philosophy one finds in the development of category theory (CT) from 1945 to 1970. The thesis is defended by looking at the history of CT and the latter is organized by following the interactions of CT with three fields: algebraic topology, homological algebra and algebraic geometry. This follows the actual development of the field and is thus entirely justified.

Chapter 1 presents the philosophical position adopted by the author. A form of constructivism is assumed, captured by the slogan that every mathematical object is first considered as an historical artefact.

The philosophical methods used throughout rest upon the interplay between the history of the field and a pragmatist point of view on knowledge. By looking at the various ways CT was used and by focusing on the epistemological properties of these usages, philosophical insights into the nature of CT ought to be gained. Ensue a presentation of Peirce's and Wittgenstein's positions on various issues related to mathematical knowledge.

Chapter 2 takes a careful look at the origins of category theory in the work on Eilenberg and Mac Lane and its applications in algebraic topology by Eilenberg and Steenrod, Mac Lane's